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Original Articles.

ON THE DIAGNOSTIC AND PROGNOSTIC VALUE OF TENDON REFLEXES.

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IT would be an interesting and important task to trace the growth of our knowledge on the knee jerk, the knee phenomenon, or the patellar tendon reflex. This, however, is not the purpose of this article. I propose confining my observations entirely to those aspects of the knee-jerk that are of a diagnostic or prognostic value. Incidental mention shall be made of the foot, or ankle clonus, and other tendon reflexes; but, as the phenomena of the deep reflexes can be best studied in the knee-jerk, this shall receive the greatest share of attention.

The physiology of the tendon reflexes has been and is still much disputed. Erb, Joffroy, Schultze, Brissaud, Gowers, and others hold that they are of a reflex character and of spinal origin; while, on the other hand, Waller, Westphal, Zichen, and others hold that they are due to a mechanical excitation of the muscle, caused by a blow upon its tendon. When, however, these two views are closely examined, there is not such a wide difference as at first sight might appear to be the case. Those who hold that the patellar reflex is due to the mechanical excitation of the muscle admit that the state of muscular irritability which causes the muscle to respond to the percussion on the tendon is in turn due to a nerve-stimulus supplied to it from the spinal cord. Thus it will be seen that there is not such a wide gulf separating the two sets of observers. My own view of the tendon reflexes, as expressed in the New York MEDICAL RECORD, of November 28, 1891, on the subject of the knee-jerk, and in the *Alienist and Neurologist*, of January, 1892, on some cases of hemiplegia, is in accord with those of Bastian, Bowlby, and Jackson, that the tone of the muscle is due to its normal and healthy connection to the spinal centre; and this latter receives its stimulus from the cerebellum, the cerebellar influx, and is held in check by the cerebrum, the cerebral inhibition. The derangement of this dynamic apparatus would at once derange the mechanism of the tendon reflexes, and there would result either a deficiency, an exaggeration, or an abolition of them. Such derangement might be of general or local origin. Gowers's view that there is a condition of muscle-tone maintained by the spinal centres, and that the tension, suddenly added to the muscle-fibres by the blow upon the tendon, causes these fibres to respond at once by contracting, is no doubt correct. While this is true, I hope to show that these spinal centres are in turn under the cerebral and cerebellar control, as above mentioned.

When the control of the cerebrum is removed by the occurrence of a hemorrhage, the growth of a tumor, the existence of a degeneration, or after an epileptic paroxysm, the muscular irritability increases and the tendon reflexes are exaggerated. This is very well illustrated by a case that came under my care some time ago. The patient was a young man who had had syphilis several years before my attendance began. When I saw him he was clearly suffering from thickening of the meninges, causing pressure on the right rolandic area, producing complete motor paralysis of the left side. The tendon reflexes on the paralyzed side were distinctly increased. Under treatment he made a perfect recovery. Here, then, we have a case where the cerebral inhibitory influence was destroyed by pressure. The cerebrum, no longer acting on the spinal centres, these became overactive, and hence the exaggeration of the tendon reflexes. The fact that there was a complete recovery from the motor paralysis, and a restoration to the normal condition of the knee-jerk, proves beyond a shadow of doubt that there had not been in this case any degeneration of the pyramidal tracts. The existence of the increased tendon reflex along with the absence of contracture and muscular rigidity, led me to form a favorable prognosis, and to exclude the presence of degeneration in the pyramidal tracts. This opinion was fully sustained by the history of the case under treatment.

In cases of cerebral hemorrhage the tendon reflexes may be enfeebled or abolished, provided the apoplexy was of sudden origin. If the blood escapes rapidly and in considerable quantity there may be a sufficient degree of shock to the nervous system to destroy all muscular tone, and produce, for a time at least, a paralysis of a perfectly flaccid type. To the absence of the deep reflexes in such cases no specific prognostic value can be assigned—the real causes of the abolition of the tendon reflexes being the position and the suddenness of the hemorrhage rather than its extensive character. In the great majority of cases of cerebral hemorrhage the reflexes soon return, and in the few instances where such is not the case, it may be that the pressure also involves the cerebellum. Should the pressure be at all marked on the cerebellum, so as to arrest its tonic influence upon the spinal centres, the tendon reflexes will not return so long as this latter state of pressure lasts. In the event of the hemorrhage being in the cerebellum primarily, even though there be no hemiplegia, there will most certainly be either diminution or abolition of the tendon reflexes, and approach toward the flaccid condition of the muscles. In cerebral hemorrhages the knee-jerk soon returns and becomes greater than the normal. In the event of cerebellar hemorrhage, the knee-jerk is absent or reduced in strength. Should the damage done by such a hemorrhage be permanent, then the knee-jerk would be permanently lost. On the other hand, if the blood-clot pressing upon the cerebellum be absorbed, the reflex may again return, and even become exaggerated, provided there be a cerebral lesion of such a character as would give rise alone to exaggeration in the tendon reflexes.

In the case of tumors in the cerebellum the knee-jerk is usually wanting. The size and position of the tumor will have much to do with this. If the pressure of the tumor be sufficient to destroy the influence of the cerebellum over the cord, so that the latter no longer receives from the former its accustomed stimulus, the patellar reflex will be absent. In my article on "The Knee-jerk," in the MEDICAL RECORD, November 28, 1891, I drew attention to the fact that this phenomenon was entirely absent in a case of cerebellar tumor under my observation, and offered what appeared to me to be the only true explanation for its absence, commenting at the same time on Gowers's views of these cases. Since the date of the above article I have had another good example of tumor in the cerebellum. There was well-marked cerebellar titubation, and, at the same time, entire absence of the knee-jerk. Osler, in his recent work, remarks, page 846, that "cerebellar incoördination has only a super-

ficial resemblance to locomotor ataxia; the knee-jerk is present, there are no lightning pains, no sensory disturbances; while, on the other hand, there are headache, optic neuritis, and vomiting." With regard to the knee jerk, such has not been my experience; and in the event of an intracranial tumor being diagnosed, the absence of the knee-jerk would lead me to locate it in the cerebellum. In the case just mentioned I knew that the knee-jerk was active and well pronounced prior to the commencement of the tumor in the cerebellum. Here, then, we have an example where the knee-jerk was present in health and disappeared with the development of the tumor.

What is the relation between the exaggeration of the knee-jerk in cerebral lesions and the descending degeneration that follows from them? This question has been much discussed and is not yet fully settled. Some hold that the knee-jerk only becomes exaggerated after several weeks, when the descending degeneration has been established. Others, again, claim that this is only a coincidence, but not a condition. This I regard as the correct view to take. First, we meet with cases of cerebral lesions in which the knee-jerk becomes exaggerated almost at once, but certainly before time has elapsed for the occurrence of descending degeneration. All that there has been time for is simply the removal of cerebral inhibition over the spinal centres, and this fact alone is amply sufficient to explain the exaggeration of the tendon reflexes. In the second place, we notice the absence of the knee phenomenon in cases of cerebellar tumor. Here we have material for close study. The cerebrum still retains its control over the spinal centres, and yet there is no reflex, provided the cerebellar disease is extensive enough to destroy its influence over the cord. In the third place, we have cases of transverse lesion of the cord, where, after a long time, no return of the knee-jerk takes place. I know of one case, now twenty-two months since the date of the injury to the cord at the level of the sixth dorsal vertebra, and though the paralyses, both motor and sensory, are of the most complete degree possible, yet there is not the first indication of the knee-jerk. Certainly degeneration in the pyramidal tracts has taken place long ago. Fourthly, cases are now recorded going to show that after cerebral injuries the tendon reflexes became greatly increased, the patient dying too soon after the injury to allow a descending degeneration to have occurred, and where none was found post-mortem. From these facts we can safely argue that the knee-jerk is not due to the existence of a degeneration in the lateral tracts, and on the other hand, because the knee-jerk is exaggerated we cannot diagnose a sclerosis nor a degeneration in these portions of the cord.

In cases of injury to the spinal cord, as fracture dislocations, the absence of the knee reflex, especially after the lapse of several weeks, is a very bad omen. In such cases it indicates that the cord is completely pulpified; and consequently the prognosis must be devoid of hope. In all the cases reported by Bastian, Bowlby, and Hughlings Jackson, where the cord was completely destroyed in its transverse diameter, the knee-jerk never returned. In my own cases the same law has been followed. In one case the cord was destroyed by an angular curvature. There was abundant degeneration, but during the illness no knee reflex. The curvature was at the fourth dorsal, and therefore well above the spinal centre for the patellar reflex; the case just mentioned above of an injury of twenty-two months' standing without any return of the knee reflex. In another case of dislocation, between the sixth and seventh cervical vertebræ, there was no return of the knee-jerk at the end of five weeks, a time long enough for degeneration. In another case of hemorrhage into the substance of the cord in the upper dorsal region there developed a severe local myelitis. The patient lived three weeks. There was no knee reflex nor ankle clonus. Post-mortem, the cord was found at the seat of the hemorrhage to be perfectly softened and devoid of all the histological characters of cord tissue. (In two other cases, which I saw with my friend, Dr. Gunn, there had been fractures of the spine, with total loss of the knee reflex. No reflex occurred in either. The injury in one case was at the tenth, in the other at the eighth dorsal vertebræ.) These cases all support the rule that, in a complete transverse lesion of the cord, the knee-jerk will be lost at once; and that the lapse of sufficient time to establish a full degree of degeneration will have no effect whatever in bringing about its reappearance or causing it to become exaggerated. In all cases of transverse myelitis, spinal cord hemorrhages, traumatisms of the cord, if we observe an abolition of the tendon reflexes, an unfavorable prognosis ought to be given. On this occasion Charcot is very positive, and my own cases would justify no other conclusion.

The knee-jerk is worthy of very close study in all cases of transverse myelitis. Bastian has called attention to the loss of this phenomenon on several occasions; and F. T. Miles has also mentioned the same fact. In four cases of transverse myelitis which I have seen, the knee reflex was absent in three, and in these there was no improvement. In these cases I gave an unfavorable opinion on account of its absence. In the fourth case the knee reflex was retained, and the patient made a considerable degree of improvement, but never a perfect recovery. There were rigidities and contractures left. So far, then, as the material at our disposal goes, I would say that in a transverse myelitis, with complete loss of the knee-jerk, the prognosis is of the worst kind possible in a rather unpromising class of cases at the best. On the other hand, if it is retained, or increased, we should be justified in holding out a greater degree of hope as to the amount of improvement likely to take place. It would appear from a careful examination of data that the degree of myelitis that is sufficient to cut off the cerebral, or inhibitory, control over the cord, while the cerebellar influx still acts on the cord, is not so great as that in which the influence of both cerebrum and cerebellum are cut off. In other words, it appears that a milder degree of myelitis may shut out the control of the cerebrum than is requisite to prevent the action of the cerebellum in producing the reflex excitability of muscles and their tonic contraction. In the milder forms of myelitis, the patellar reflex would likely remain, or even be increased, whereas in the more intense forms this sign would be lost.

In all diseases or injuries of the motor areas of the brain, causing a loss of control over the spinal cord; in all injuries and diseases of the motor paths, capsular, crustal, or pyramidal, by which the influence of the cerebral cortex is cut off from the spinal centres, there is developed a condition of extreme excitability of the reflexes. Such conditions as spastic paralysis following some lesion in the motor tracts, primary spastic paraplegia, cerebral spastic paralysis of children, the ataxic paraplegia of Gowers, and multilocular sclerosis are all conditions in which we meet with an exaggerated condition of tendon reflexes. The sooner the knee-jerk becomes increased in these cases, and the greater the degree of this increase, the worse must our prognosis be. The reasons for this gloomy prognosis, under such conditions, are the more extensive the damage in the motor tract the more complete will be the separation of the cerebrum from the spinal cord; and the subsequent incurable degenerations will be in proportion to the amount of motor fibres destroyed. In insular or multilocular sclerosis, as a rule, the increase of the knee-jerk is not so marked, owing to the fact that in this form of degeneration the axes cylinders of the nerve fibres are often spared to the last, and the connection between the cerebral cortex and spinal cells maintained. In a case, then, of multilocular sclerosis, as clearly indicated by its main symptoms, the early and extreme increase in the knee-jerk would be a very bad feature and would indicate that the axes cylinders were destroyed. Indeed, the date at which the

sclerosis begins to involve the axes, in addition to the medullary matter of the fibres, can in this way be approximately diagnosed. Thus it is that in cases of insular sclerosis the knee-jerk may be normal, increased, or abolished, according as the patches of sclerosis do, or do not, involve the paths connecting the cerebrum, or cerebellum, with the spinal cord.

In cases of sclerosis of the spinal cord, where several of its constituent portions are attacked by disease, the study of the knee-jerk requires careful study. In a recent number of the *British Medical Journal*, Jackson and Taylor report a case of great interest. It was that of a patient with ataxia, who had an attack of hemiplegia. As the damage done to the motor tracts by the second disease removed the controlling influence of the cerebrum from the spinal cord, the knee-jerk gradually returned on the hemiplegic side. The authors of the paper offer it as their opinion that the inhibitory influence of the cerebrum once removed, there was sufficient stimulus travelling through the postero-external column of the cord to produce the jerk. This opinion is no doubt correct. In the *Alienist and Neurologist* for January, 1892, I reported the case of a hemiplegic who became ataxic. The knee jerk on the non-hemiplegic side soon disappeared, but persisted much longer on the hemiplegic side. The reason is clear. On the paralyzed side the knee-jerk was greatly in excess, prior to the ataxia, and took a longer time to disappear, as the inhibitory control of the cerebrum was greatly lessened on that side. In cases of a sclerosis of the pyramidal tracts the knee reflex is in excess. Under these conditions, if the tendon reflex should gradually disappear, two conditions should be suspected: the concurrency of ataxia, or anterior polio-myelitis. In the former there would be the symptoms of the disease with the lightning pains. In the latter, there would be, along with the loss of the reflex, the coincidence of atrophy of the muscles and the reaction of degeneration and a flaccid exudation of the muscles.

General paresis—dementia paralytica or chronic meningo-encephalitis—is a disease we are all more or less familiar with. The only chance for the unfortunate victims of this disease is to be found in its early recognition. Unless this be done the treatment cannot be expected to yield much fruit. As I am dealing with the single phenomenon of the knee-jerk on the present occasion all other questions shall be left out of this article. The pathology of the disease is to be found in changes in the tunica of the arteries, development of lymph, connective-tissue, a stage of shrinking of these parts, thickening and opacity of the meninges, a wasting and atrophy of the convolutions. If we look at these changes for a moment we can see how all important an early diagnosis must be. The changes just outlined show clearly that the action of the cerebrum would be greatly impaired. This impairment in the cerebrum would show itself at an early date in the condition of the knee reflex. As soon as the influence of the cerebrum over the lower spinal centres begins to fail the jerk would begin to increase. The mental symptoms of paresis would distinguish it from ataxia. The suspicion once aroused that general paresis is a possibility, the knee phenomenon ought to be very closely watched. The earlier in the disease this becomes increased, and the more rapidly that increase takes place, the worse the prognosis. This is evident. The more rapid and progressive the destructive changes in the brain prove themselves to be the more rapidly will its control over the cord become. In eleven cases of general paresis that I have had the opportunity of studying, those cases did worst and advanced most rapidly where the knee-jerk was earliest increased. The more rapid the increase happened to be the more active was the march of the cerebral changes. One of my cases from the commencement of the attack till the death of the patient was only one year. The knee-jerk was most extremely exaggerated. In another case, lasting one year and a half, the patellar reflex was greatly increased and was one of the first conditions to make its appearance. Of the eleven cases, the jerk was increased in seven, in two there was little or no change, either as increase or decrease, while in two there was decided decrease. In these latter cases there was coincident sclerosis in the posterior columns of the spinal cord in one, and degenerating in the anterior cornua in the other. Charles F. Folsom, in writing on this disease, remarks that the knee-jerk is oftener increased than lessened. This is no doubt due to the fact that the chronic degenerative changes of the disease is oftener found in the cerebral cortex and meninges than in any other portion of the central nervous system. From the study of these cases I would conclude thus: 1. When the knee-jerk is little affected, the disease in the cerebrum is not very extensive; and the more rapidly this increases the more rapid will be the increase in the knee-jerk. 2. When the knee-jerk is reduced or lost there is coincident disease in the spinal cord, either of the postero-external columns, or of the anterior cornua. 3. If the disease be in the posterior columns there will be symptoms pointing to this, as found in tabes dorsalis. 4. When the cord disease is in the anterior cornua, along with the loss of the knee-jerk, there will be flaccidity, atrophy, and degeneration of the muscles, as was very well illustrated in one of my cases. 5. The loss of the knee-jerk, due to either of these morbid changes, would call for very unfavorable prognosis, and would exclude much hope of even a temporary arrest of the disease.

The next condition to which I shall direct attention is that of cerebral concussion. Of this condition I have had the opportunity of studying five examples. In these instances the knee-jerk was closely watched, and presented some features of unusual interest to every scientific physician. In one case, where the concussion was induced by the young man having been pounded on the head by some ruffians with a sand-bag, there was, after the shock had passed off, a very remarkable amount of increase in the patellar reflex. The superficial reflexes were also increased. There was no ankle clonus in this case. Rectus clonus could be very readily elicited. It was during the stage of cerebral irritability that the knee-jerk was most notably exaggerated. This case made a good recovery; and just as the cerebrum regained its tone, and the intelligence returned, the knee-jerk gradually became less active and finally sank to the normal. In another case of concussion, caused by a man being thrown out of his wagon, the condition of concussion did not improve, and the patient died at the end of six weeks. Over the cerebrum there was the condition of diffuse meningo encephalitis. In this case the cerebral cortex may safely be presumed to have been seriously impaired and its inhibitory power over the spinal centres must have been greatly reduced. During the progress of the case the knee-jerk became markedly increased. Toward the end ankle trepidation also appeared. This case is closely related to general progressive paresis, in which, as I have already shown, the knee-jerk is exaggerated when the disease affects the cerebral cortex only, or mainly. In another case of concussion a very interesting condition developed. The knee jerk on one side was reduced, though not abolished; but on the other side it was decidedly plus. Now the only way to account for this crossed condition of the patellar reflex, seeing that the patient got well, is to suppose that the cerebral and cerebellar influxes were differently affected on the two sides. On one side the cerebral inhibition was destroyed and the knee-jerk was increased. On the other side the cerebellar power was deficient and the knee-jerk became reduced. In the remaining two cases the concussion was slight, and the effects only lasted for a few days. In both, however, there was increase in the tendon reaction. In the one the response was very quick and the extent of the jerk three inches, in the other the response was also above the normal in sensitiveness, and the foot was

carried forward from four to five inches. I would therefore sum up as follows: 1. In cases of cerebral concussion, after the primary shock has passed off, the greater the amount of increase in the knee-jerk the greater the damage done to the cerebral cortex. 2. The gradual increase of the jerk is an unfavorable sign. 3. And finally, the restoration of the reaction to its normal should be regarded as of good omen.

When we turn to the cord itself, we are confronted with many new problems. Thanks to the labors of Charcot, Erb, Westphal, Gowers, and many others, much of the obscurity that once encircled these cases has been cleared up, and we now begin to see our way through what was once a tangled thicket with no beaten pathways. In primary and secondary degenerations in the lateral, or pyramidal tracts we are all familiar with the increase in the knee phenomenon. This is due to the fact, no doubt, that the inhibitory power of the cerebrum is no longer exerted in the normal way over the spinal centres; and the cerebellum is not counterbalanced by its larger neighbor. In all those cases where the knee-jerk is reduced or lost from cord diseases the arc of the reflex is broken in the cord at the junction of the sensory and motor portions of the arc. When the disease is located, as it is in locomotor ataxia, in the postero-external columns, the damage is done at the termination of the sensory portion. In those cases where the disease is in the anterior cornua the circuit is broken at the origin of the motor portion. The more rapidly the disease or degeneration advances in the hot zones, or in the anterior cornua, the more rapidly will the knee-jerk be lost. It is here that its great value comes, as it enables us to measure to a very considerable extent the marches that the morbid processes are making. In the case of disease in the postero-external columns there will be loss of the knee jerk, together with sensory symptoms, and the absence of flaccidity and degeneration in the muscles. When the anterior cornua are implicated there are present both flaccidity and degeneration of the muscles, with absence of special sensory symptoms. Now, it is clear that the more rapidly and completely the knee-jerk is lost in the above conditions the more rapidly is the disease making its inroads and the less favorable must the prognosis become.

In ataxia, a period of quiescence in the disease can often be dec ded by the fact that the patellar reflex is not decreasing in amount. In anterior cornuitis the stationary or returning condition of the reflex are good features, as they show that the destruction of the cells in the anterior horns is either non-progressive, or that there is some improvement. In a case or paraplegia from pressure, as in Pott's disease, there is usually an extremely exaggerated condition of the reflexes, and foot and rectus clonus may be readily detected. This excessive condition of the deep reflexes by no means justifies the opinion that there is a condition of degeneration, as I have seen several such cases recover. But here comes in the point to which I now call attention, that as recovery begins to set in, and the pathological process affecting the cord are ameliorating, the knee-jerk begins to decrease in extent and activity. Thus we have in the study of this phenomenon a key to enable us to some extent to read the changes that are going on in the cord.

In the combined forms of spinal cord degenerations the value of the knee-jerk still holds good. When the lateral tracts and the anterior cornua are both involved, the condition known as amyotrophic lateral sclerosis of Charcot, the reflex would be exaggerated so far as the disease in the pyramidal tracts is concerned, but it would be reduced or lost so far as the cornual degeneration is concerned. If this degeneration involved the centre for the knee reflex, which C. S. Sherrington has shown to be at the origin of the fourth lumbar root, the reflex would be lost. In the other combined condition, the ataxic paraplegia of Gowers, we have again one factor, degeneration in the pyramidal tracts, which increases the reflex, and another factor, degeneration in the posterior columns, which lessens the reflex. In both of the above diseases it will easily be seen that the knee-jerk deserves very close study. By its loss we can approximately determine the amount of injury done to two portions of the cord, namely, the anterior horns on the one hand, and the posterior root zones on the other.

I. Babinski, formerly chief of the clinic at the Sâlpêtrière, in the *Archives of Experimental Medicine and Pathological Anatomy*, November 2, 1891, puts on record two cases of compression of the spinal cord in which there was complete motor paraplegia. In one of the cases there was loss of sensation, in the other sensation was retained. There were recto vesical symptoms in both cases. In one case the disease was at the level of the fourth dorsal vertebra, in the other it involved the fourth, fifth, sixth, and seventh cervical roots. A very careful examination of the cord in both cases after death revealed the important fact that there was no change in the cord itself. There was neither ascending nor descending degeneration found in any of its constituent elements. The disease was without the cord. Kadner and Druschky have each reported a similar case. Now the great feature in all these cases was the entire absence of the knee jerk. There was, in other words, a complete motor paraplegia of the flaccid type.

To the above cases I shall add the notes of one I saw in consultation. The man was laying the floor in a building in the course of construction. He was in a stooping position, when a block of timber fell from some distance and struck him on the back, bruising severely the integument over the lower three cervical and the first dorsal vertebræ. He had to lie quiet for a short time; and when he attempted to walk he found that he had almost lost control over his arms and legs. There was severe pain. He was taken home, and treated by rest and the application of an ice-bag to the injured part. The pain increased, and by the following day all motion and sensation was gone. I saw him on the third day. The diagnosis made was that of pressure from hemorrhage. The knee-jerk was absent. There was considerable inflammatory action. The bladder and rectum were both affected. At the end of one month from the date of the injury the sensation had returned fairly well; but there was no return of motor power. Now the question arose, what were the chances of recovery? The knee-jerk was still absent on both sides. If the cord had been injured transversely through its entire thickness, so far as to abolish the jerk, there would have been degenerations by the end of four weeks. The injury is situated so as to implicate the roots of the bronchial plexus; and we should find degeneration in the muscles of the arms when tested by the electric currents. This was not the case. For, though the muscles were quite flaccid, the reaction of degeneration was wanting. I therefore concluded that the cord was not destroyed and that the anterior roots had a healthy connection with the anterior cornua, and that therefore the nutrition of the muscle was well maintained. Putting the two facts together, that the knee-jerk was entirely gone and that there was no muscular degeneration, I came to the conclusion that the cord was subjected to pressure, but that it was not structurally changed. The prognosis was therefore more hopeful. After a lapse of six months, the patient is able to walk, though not yet well. There are no indications of any form of chronic degeneration in the cord. From the above five cases, we conclude: 1. That when there is positive evidence of disease of injury to the spinal cord, the condition of the patellar reflex should be closely noted. 2. If the reflex is absent, and continues absent, there is one of two conditions—a complete transverse lesion, or a pressure on the cord without any actual tissue changes in it. 3. If the condition be one of total destruction of the cord in all its thickness, the muscles supplied by the nerves coming off at the seat of injury will atrophy, and there would be the reaction of degeneration. 4. If there be no reaction of degeneration, while

the knee-jerk is lost, we may conclude the cord itself is still intact, and a recovery within the range of possibility. In such cases, it is only the dynamic functions of the nervous system that are deficient or held in abeyance.

Another condition in which the knee-jerk is lost is multiple neuritis, when the nerves playing a part in its mechanism are affected. Of this condition I have published the notes of eighteen cases. The reflex arc in this condition is broken in its peripheral portions, either sensory or motor; the knee-jerk is lost, as it is in locomotor ataxia, or in anterior polio myelitis; there will be flaccidity and atrophy of the muscles as in the latter disease, and pains as in the former. The pains, however, of neuritis differ from those of ataxia in being more like rheumatism. The pains are constant; there is tenderness on pressure, tingling, and other paræsthesia. In ataxia the pains are momentary, sharp, and stabbing in character. To produce the sensory and motor disturbances, found in polyneuritis, by disease in the cord, both posterior columns and anterior cornua would have to be diseased—a combination that has not as yet been found in any case. If, then, we meet with a case of flabby paralysis, with loss of knee jerk, more or less reaction of degeneration, tingling and numbness, tenderness on pressure, absence of sharp, stabbing pains, we may conclude that the case is one of neuritis. In many of these cases the knee-jerk may be entirely absent and yet the person able to be around on foot; but there is a characteristic stiff, stoppage gait. In Landry's paralysis there is not, according to Hun, Gowers, etc., the pain, tenderness, and sensory disturbances found in neuritis. In the case of neuritis, when the anterior crural nerve is not involved, the knee-jerk would not be lost. In arsenic, lead, and alcoholic paralysis, I have noted the knee-jerk carefully; and in all the cases where there were leg pains and a pseudo-ataxic gait the jerk was lost or very much reduced.

To the late R. L. McDonnell, of Montreal, belongs the credit of calling attention to the knee-jerk in diphtheria. In this disease it is frequently absent. The question at once arises, How does the diphtheritic poison act on the nervous system so as to cause this sign to disappear? Is there always a multiple neuritis present, when the jerk is absent? To this latter interrogation I think a negative answer must be given. The toxalbumins found in the system during an attack of diphtheria are, I think, sufficient to account for the absence. These poisons may act on the nerve-tissues of the body in some manner other than by calling into existence a neuritis, so as to lessen or destroy the inherent excitability of the muscles. This feature I shall refer to when speaking of the condition of a deficient amount of oxygen in the blood. I have noted instances where the jerk was lost at the very inception of the attack, and when all sensory disturances were wanting; and in which the attack passed off, and the jerk again returned, without any neuritis. The fact, however, that the jerk is absent, shows that the poisons of the disease are acting very directly on the nerve system; and consequently very important conclusions, of much prognostic value, may be deduced. Of 100 cases of diphtheria, in patients over four years of age—as very little can be expected from the jerk at an earlier age—it was absent in 61. Among the 39 in whom the jerk was not lost, neuritis in some part occurred in 9. In the 61 where it was lost, neuritis was found in 34. Thus, of the group without the loss, less than one-fourth had neuritis; whereas in those with the loss, over one-half had neuritis, subsequently. From my cases I would conclude: 1, In doubtful cases of sore throat, the loss of the knee-jerk would point to its being an attack of diphtheria; 2, that the loss of the jerk does not prove the existence of a neuritis; and 3, that the chance of neuritis is greatly increased where there is the loss, and, *per contra*, the prognosis is not so good.

In the *British Medical Journal* for February 13, 1892, J. Hughlings Jackson contributed a short note on the knee-jerk, in conditions where the blood is supervenous. This aspect of the case deserves close attention. There are some cases of apoplexy in which the jerk is lost, and Jackson suggests that this may be due to the venous condition of the blood, as we know it is in some cases. I have not yet had an opportunity of testing this as yet. After an epileptic fit the reflex is increased in some, lost in others. When the cerebral inhibition only is lost, the jerk must be increased. On the other hand, if there be a highly venous condition of the blood, or, if the epilepsy be due to cerebellar disease, as I have shown (New York Medical Journal, September 5, 1891) may be the case, the jerk will be lost. A short time ago I was sent for one morning to see a family near me who were affected by coal gas from the stove. The mother and her two sons, aged fifteen and eleven years, were the only persons in the house. They had gone to bed, and were under the influence of the gas till morning. The milkman called at the house in the morning, and, failing to elicit any response, he forced open the back door. On seeing the condition of the things he came for me. In the cases of the mother and youngest son, the asphyxial state was pronounced, and the knee-jerk entirely absent. It gradually returned as the venous condition of the blood passed away. In the eldest son the condition of asphyxia was not great, and the jerk was decidedly exaggerated, becoming less again as the blood became properly aerated. This latter case is very instructive, as it shows that a moderate degree of venosity lessens the inhibitory power of the cerebrum, and the jerk becomes greater; but as the blood gains oxygen the power of the cerebrum is restored and the jerk comes back to the normal. In another case, that of a boy aged nine, there was impending suffocation from acute laryngitis and œdema glottidis. The lips were very livid and the surface of the body dusky. At this stage the knee-jerk was gone. The day after the intubation of the larynx the venosity had passed away, and the jerk was present. These cases are not given as anything new, but simply as a corroboration of the views set forth in J. H. Jackson's note already referred to.

In alcoholism the knee-jerk is worthy of attention. I have made in all five observations, at different times, on persons who at the time of the examinations were inebriated. In none was the degree of drunkenness extreme. The persons were all able to walk, but with a very unsteady and zigzag gait. The speech was affected in all. The jerk was increased in all. The explanation for this is most likely to be found in the action of the alcohol weakening the inhibitory power of the cerebrum. It would be interesting to know whether or not the reflex is lost in those cases of extreme alcoholism, when the breathing is stertorous and the blood badly oxidized. I have not yet met with such a case, but on my first opportunity I shall bring the matter to the test.

How about the jerk in men in perfect health? My answer is that it is very seldom absent. If the tests be made with care, the jerk can be obtained in nearly all cases. The use of a hammer instead of the hand, or, locking the person's hands together, as recommended by Jendrassik, will elicit it when the ordinary plan might fail. I have made two hundred tests in perfectly healthy men whom I was examining for life insurance. I did not find it wanting in one. In two it appeared deficient, but was increased at once by holding the hands together. Now it is here I make the distinction between health and disease. When the loss is due to disease I have never found any of the plans cause an increase. On the other hand, as just stated, when the jerk is deficient, and there is no disease, placing the hands together, and making strong voluntary effort at once causes a perceptible increase.

Sterility Following Typhoid Fever.—It is said to be a popular belief in England that a man who has had typhoid fever in his youth is incapable of begetting children. Why he should be sterile is not explained.

THE RADICAL CURE OF INGUINAL HERNIA —BASSINI'S METHOD ILLUSTRATED—WITH REMARKS ON RECURRENT AND VENTRAL HERNIA.[1]

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With the advent of antiseptics the surgeons were not long in trying to find some operative procedure which would relieve the thousands of beings suffering from hernia. Up to the era of cleanliness, or antiseptics, the peritoneum was entered with the greatest reluctance, and then as a last resort, being practically limited to those cases of strangulated hernia which had baffled all palliative measures. Taxis was, no doubt, often carried too far, and when the operation was necessitated, it was considered very skilful to be able to relieve the constricting band without entering the hernial sac. During that period the various subcutaneous methods were instituted, silk and silver-wire sutures being employed for closure of the hernial opening. The number of cures effected in this way can best be illustrated by saying that such operations are entirely out of date.

Heaton's Operation.—The subcutaneous injection of a solution of white-oak bark into the inguinal canal can be termed a daring, rather than a scientific, procedure. Having been able to follow a number of these cases from the time the injection was made until the hernia recurred, and subsequently had cutting operation performed, I feel that my observations are convincing.

The danger from peritonitis is of little importance, for in not a single case have I seen such symptoms arise, and it was proven on dissection that the fluid had sometimes been placed on the serous surface, along the canal, but not infrequently it was found to have been deposited in the surrounding structures instead. All that can be expected from this method is a temporary barrier to the protruding viscus, as the infiltrated mass, the result of the irritant, will eventually be absorbed, leaving only the stain of the white-oak bark.

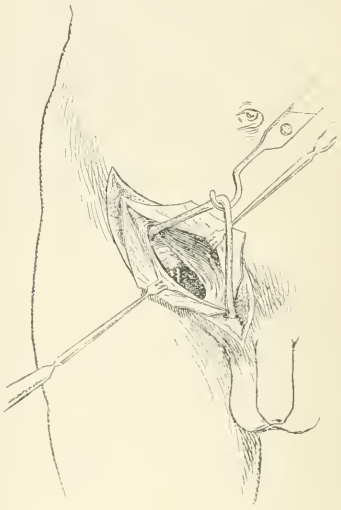
The Cutting Operations.—Before describing the method under consideration, I shall endeavor to mention a few of the points at fault in some well-known methods.

1. **Macewen's.**—Which consists in the formation of a pad by throwing the sac into folds and invaginating it into the inguinal canal.

The first and immediate danger to be anticipated is sloughing of this fibro-serous membrane, the vitality of which must necessarily be lowered. When suppuration does occur, a sinus may remain from a few weeks to several months. One case has come under my observation in which two years had elapsed without any inclination for it to close, and in this instance the hernia had recurred as well. Should immediate union of the wound be obtained, it is nature's endeavor to remove this or any other foreign body that may be so placed; hence absorption sooner or later.

2. **The Open Method.**—In which the inguinal canal has been so successfully replaced by a cicatricial plug, and which offers such flattering immediate results, has afforded me a most admirable opportunity of studying the self-destruction of adventitious tissue.

Six weeks after the operation, which is the usual time that advocates of this procedure keep their patients in bed, a contracted cicatrix, from two to three inches long and one-quarter of an inch broad, prevents very successfully even the slightest impulse. A number of these patients have come under my observation, the larger proportion of them having worn no truss until the recurrence had taken place. This precaution seems to be a very wise one under such circumstances, as even the most delicate pressure from without added to the constant force being exerted from within, would no doubt hasten a process that is inevitable, *i.e.*, stretching and thinning of the cicatricial mass. The recurrent herniæ observed after this method, during the first six months, have been rather a separation of the cicatrix, usually at the site of the internal ring, from the musculo-tendinous structures adjacent. It is, however, the more gradual process, the thinning of the cicatrix, which concerns the comfort and ultimate welfare of the individual operated upon. I have observed repeatedly, and demonstrated the same in my lectures at the New York Polyclinic, peristalsis of the



intestine through the cicatrix. It is needless to say that the wearing of the most perfectly fitting truss occasions great discomfort.

One other complication that sometimes occurs in these cases, as in other abdominal sections where cicatricial union is obtained, is the adhesion of the peritoneum, which causes the patient such agonizing pain on coughing.

3. **Suture of the External Abdominal Ring.**—The best demonstration, to me, of the inefficiency of the closure of the external abdominal ring, is brought out in a paper by Dr. Bull, read before the New York State Medical Association, September, 1889, in which he was able to report forty cases; all were inspected, at periods varying from a few months to six years.

"Twenty of this number had been operated upon by excision and ligation of the sac; the remaining twenty had excision and ligation of the sac, together with suture of the pillars of the external abdominal ring."

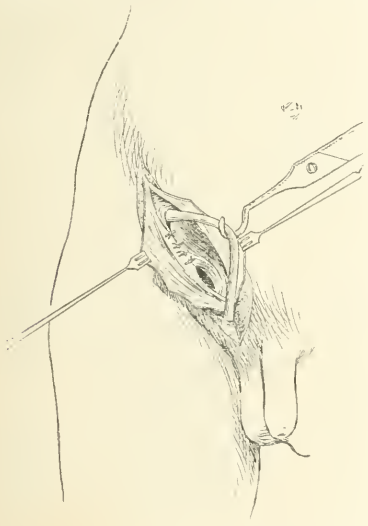
According to the report, "By both methods, in all varieties, there were sixty per cent. of cures and forty per cent. of failures."

With the above clinical facts, I am convinced that the external abdominal ring has nothing to do with the causation of hernia. Whether it be closed with catgut or silver wire, after ligation and excision of the sac, the percentage of recurrence will continue to be large just so long as the abdominal contents are allowed to enter the inguinal canal. For once there, the closed pillars will soon yield under this constant strain. The condition of the sac, I must confess, is quite secondary to that of the internal ring, as is demonstrated by the frequency with which reducible hydrocele is met with, demonstrating that there exists a communication with the abdominal cavity without a hernial protrusion. It is to the operation for reconstructing the inguinal canal that I wish to call the attention of the Association, believing that the method will appeal to one and all as thoroughly scientific and practicable.

[1] Read before the Texas State Medical Association, April 27, 1892.

Cleansing.—The pubis and scrotum being cleanly shaven, the skin should be soaped and scrubbed with a coarse brush; next the whole area must be washed with plain water; subsequently ether is applied to remove all oily material, and lastly with a 1 to 1,000 corrosive sublimate solution. Great care should be used in thoroughly cleansing the glans penis, which is so very liable to infect the wound during the operation.

Operation.—*Bassini's Method.*—The patient being thoroughly anæsthetized (I prefer ether, administered with the "Ormsby Inhaler"), an incision is made, beginning at the spine of the pubis, and extending upward and outward. The upper extremity should be about two inches internal to the anterior superior spine of the ilium—everything is divided down to the tendon of the external oblique. The latter is incised over a grooved director, passed into the external abdominal ring, superficial to the hernial sac and cord structures. To expose the internal ring properly, the tendon should be cut for about two to two and one-half inches. The upper flap is now freed from the underlying structures and reflected toward the median line until the conjoined tendon, composed of the internal oblique and transversalis muscles, is brought well into view. The lower flap or segment of the anterior wall of the inguinal canal is next dissected from its underlying fascia, until the shelving process of Poupart's ligament is exposed. These flaps being held back by retractors, the next point of technique is to hook up with the index-finger the cord



structures as they pass over the spine of the pubis, and lift them and the hernia out of their bed. This blunt dissection should be continued until you have reached the internal ring. The hernial sac, without reducing its contents, should now be isolated; this is best done by dividing the overlying structures on a grooved director until you have exposed the bluish-grey thickened membrane for a small area. This coat is raised with a small pair of rat-toothed forceps, that the hernial contents may not be injured when the opening is made. The entrance into the peritoneal pouch should be manifested by the escape of a small amount of serum, unless it be an incarcerated or strangulated hernia, when the fluid may be tinged with blood. The contents having been examined, all adhesions that may exist are tied off with fine catgut. Large masses of omentum should be ligatured, not necessarily at the most distal point, but where the greatest constriction exists, and it is advisable to use the transfixion method. Occasionally it occurs that the obstacle to reduction is a fibrous constriction situated within the internal ring. That is, however, easily detected at this stage of the operation, and can be divided without danger by incising upward. Returning to the treatment of the sac, it must be completely separated from the cord and other adherent tissues well within the internal ring, and a moderate amount of traction made uniformly at all points, which is best accomplished by a series of artery forceps held by an assistant.

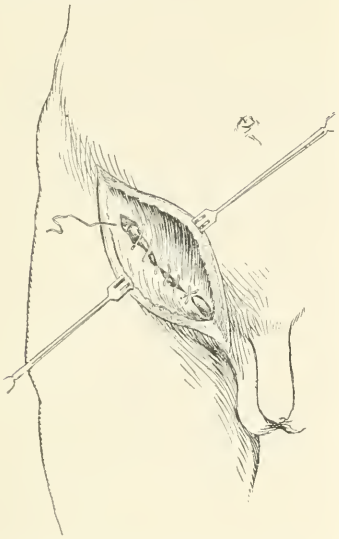
Ligation with catgut is done also by the transfixion method. The sac is excised, leaving the pedicle about a quarter of an inch in length, which immediately retracts into the abdominal cavity. When a congenital hernia exists, the sac should be cut off one inch above the testis. The reforming of the tunica vaginalis is of no importance, and the prevention of hydrocele will thus be attained. This completes the first step of the operation.

Second Step.—The upper and lower flaps, composed of the segments of the tendons of the external oblique, being well retracted, the cord structure held out of the operative field by a blunt hook or the finger of an assistant, the conjoined tendon on the upper side is now united to the shelving edge of Poupart's ligament, by a series of interrupted chromatized catgut or kangaroo tendon sutures. The Macewen blunt-pointed needle accomplishes this admirably. The needle, when passed through Poupart's ligament, must not include more than one-quarter of an inch from the edge. The relaxed posterior wall of the canal, composed of the transversalis fascia, may be included in the upper grasp of the needle, along with the conjoined tendon. From four to six sutures, inserted in this way, will be sufficient to firmly unite the musculo-tendinous structures, forming a new posterior wall for the canal. In this reconstruction care must be taken not to constrict the tissues of the cord.

Third Step.—The formation of the anterior wall of the canal is accomplished by suturing the recently divided external oblique tendon, continuously, with fine catgut, throughout its entire length. This re-establishes the valve-like condition of the inguinal canal. The skin wound is closed with interrupted catgut sutures after the insertion of a small glass drainage-tube, from two to two and one-half inches long, into the lower angle of the wound, and the following dressing is applied:

Iodoform powder (or what is preferable, fine crystals) should be spread along the line of suture and around the drainage-tube; on this a strip of Lister protective or rubber tissue, two inches wide and long enough to overlap one inch at the ends, a perforation being made for the drainage-tube; moist iodoform gauze, six layers thick and sufficiently long and broad to overlap the wound two inches on all sides, also perforated for the drainage-tube; next a larger compress of moist sublimated gauze is placed over the upper part of the wound and held in position by a two-inch strip of surgeons' rubber adhesive plaster, extending almost entirely around the pelvis. An intervening layer of rubber tissue should be used to prevent infection from the plaster. Over the drainage-tube is placed sublimated gauze, very loosely distributed; next, cotton, and lastly it should be covered by rubber tissue, one foot square, which is perforated for the penis and held in position by a Hank truss or simple spica bandage. The advantages of having the above dressing are several: First, infection from without is prevented by the rubber tissue, which is most external, and by the small strip which is in immediate contact with the skin. By means of the adhesive plaster alone can perfect retention of the deeper dressing be accomplished. However, the most important point in this detailed dressing is the arrangement of the drainage-tube, which can be removed at the end of thirty-six or forty-eight hours by simply taking off the external dressing and not disturbing that which is in immediate contact with the wound. After its (the drain) removal the point of exit should be iodoformized well, covered with loose sublimated gauze, and a new protective

dressing applied. Where animal sutures have been employed the wound should heal under one dressing, even in cases of strangulation.



Confinement in bed for three weeks has been the maximum. Since I have been performing this operation this has occurred in but two cases, in each of which I endeavored to discard the glass tube and adopt capillary drainage with strands of catgut. In each of these cases a moderate amount of retention took place and primary union was prevented. No case should be permitted to leave bed before a fortnight, as too great a strain will be put on the freshly united structures.

After-treatment.—In all my cases, when this or any other radical operation has been performed, I insist on the wearing of a truss for six months. The choice of apparatus is a subject worthy of consideration, as it would not only be uncomfortable but hazardous to apply a truss with a powerful spring; on the other hand, a light and uncertain support must be avoided. Any of the frame or complete band trusses, preferably with a water pad, will give the greatest comfort to the patient, and will afford the most uniform and perfect support to the inguinal region.

Conclusions.—No attempt has, or shall be made to present to the Association a statistical paper, as sufficient time has not elapsed in any of my cases to pronounce them radically cured. Suffice it to say, that during the past eighteen months I have operated after this plan on ten cases, and as yet not a single recurrence has appeared. However, with the author's permission, I shall make a few quotations from Professor Bassini's book, which was published in 1889, and as late as September, 1891, he wrote me that the percentage of cures was quite as large, in proportion to the number operated upon, as at the time of the original report.

Statistical Remarks.—"Two hundred and sixty-two were operated upon, ten of these were strangulated. Of the two hundred and fifty one non-strangulated cases, one hundred and eight were observed from four and one-half years to one year; thirty three from one year to six months; ninety-eight from six months to one month; seven recurred; four, the results are unknown; one died of shock."

To Mr. Bert Wilder, of *Harper's Weekly*, I am indebted for the truthful and artistic illustrations.

157 Madison Avenue.

ON THE STERILIZATION OF MILK AT LOW TEMPERATURE,

With Description of a New and Simple Apparatus Applying the Principle of Pasteurization.*

By ROWLAND GODFREY FREEMAN, M.D.,

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Since attention has been directed to the large number of bacteria in the ordinary milk supply, some at least of which appear to be deleterious, efforts have been made to more or less completely kill them by means of heat sterilization. This has, until recently, been accomplished by exposing milk to a temperature of 100° C. (212 F.) for a period varying from twenty minutes to an hour and a quarter. After an experience of six years with milk so prepared, the general verdict of the profession is, I believe, that while sterilized milk is most valuable in the treatment of gastro-intestinal disorders, it is very often unsatisfactory when used as a regular food, seeming for some reason not to fulfil the condition of perfect nutrition. Analyses explain this, in a measure, by showing that various chemical changes take place in milk between 75° C. (167° F.) and 100° C. (212° F.) and that these changes become more marked as the temperature becomes higher. According to Leeds,[1] sterilization at the boiling-point of water or 100° C. (212° F.) causes the following modifications in the milk: The starch liquefying ferment is destroyed and coagulated. A portion of the lactalbumin is coagulated. Casein is rendered less coagulable by rennet and is acted on slowly and imperfectly by pepsine and pancreatin. Proteid matters attach themselves to fat-globules and probably bring about a less perfect assimilation of fat. Milk-sugar, by prolonged heating, is completely destroyed. According to Koplik,[2] "from the temperature of 75° Celsius upward there is a separation of the serum albumin of the milk; the caseine loses its coagulability to rennet, and at 85° C. amounts of rennet, which for the raw condition of milk are found sufficient to act, cease to be effective." Heuppe, quoted by Koplik,[2] considered that, from a physiological standpoint, milk is best sterilized, if possible, under a temperature of 75° C. In the meantime it has been shown by investigators that temperatures lower than 100° C. (212° F.), if continued for a short time will destroy a very large proportion of the germs, and will destroy with certainty many pathogenic germs which find their way into milk either from the cow or as external contaminations.

The problem then presents itself to devise a method of preparing milk which shall destroy by efficient means the contained germs, and yet in the least possible degree interfere with its nutritive qualities. In other words, the minimum temperature used must be high enough to destroy most of the germs; the maximum must be so low as will not alter materially the chemical composition of the milk. Pasteur [3] found in 1868 that exposure of wine for a short time to 55° C. would prevent its spoiling; other observers have found that 60° C. (140° F.) to 70° C. (158° F.) was sufficient to kill bacteria. The term pasteurization is now used for any process by which the germs of wine or milk or other fluid are destroyed by the use of heat between 55° C. and 80° C. followed by rapid cooling. It should be mentioned that pasteurization does not usually render all germ-containing fluids absolutely sterile, all spores are not deprived of life and certain vegetative forms may prove invulnerable. But a sufficient number of such forms may be killed as to check, if not permanently hinder, fermentative changes. The rapid cooling is necessary to prevent the spores which remain in the fluid from developing.

Of the thoroughly known pathogenic germs which may exist in milk, the bacillus tuberculosis, in the light of our present knowledge, is one of the most important. As the result of very elaborate and recent experiments by

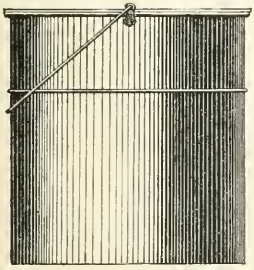
* Read before the Section of General Medicine of the Academy of Medicine, New York, June 20, 1892.

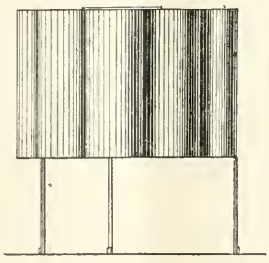
Yersin,[4] Granchier and Lidoux-Libard,[5] and Bitter,[6] one may conclude that any of the following exposures to heat will destroy the bacillus tuberculosis in milk: 75° C. (167° F.) for ten minutes; 70° C. (158° F.) for fifteen minutes; 68° C. (154½° F.) for thirty minutes.

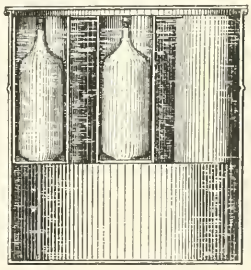
It is practically difficult by microscopic examination, by inoculation experiments, or physical examination of cattle, to determine that the milk of any cow is free from tubercle bacilli. It seems important, therefore, that pasteurization should be carried out with a sufficient temperature to destroy with certainty the bacillus tuberculosis. Concerning other pathogenic bacteria, Van Geuns[7] found that a few seconds' exposure to 60° C. (140° F.) would kill the cholera sporilla, the Finkler Prior bacillus, the typhoid bacillus, and the pneumococcus of Friedlander.

While it is important to destroy the pathogenic germs above described, the beneficial effects of sterilized milk, especially in summer diarrhœa, are undoubtedly due to the destruction of other, as yet little known forms which the milk, especially in summer, is apt to harbor. Experiments already done in low temperature sterilization of milk and those to be detailed below, would lead us to the belief that these unknown deleterious germs may also be destroyed by this temperature.

From what has been stated one may conclude that a temperature of not less than 70° C. (158° F.) will render milk sufficiently germ-free for infant food, and that a temperature of less than 80° C. (176° F.) will not injure milk materially. Methods of pasteurizing milk in quantities have been presented to the public both in Germany and in this country, but as far as I know no such method for household use has been published. Such an apparatus should be a simple affair for use on a stove. The problem of sterilization at 100° C. (212° F.) was fairly simple, since the boiling-point of water is a definite temperature, and boiling produces phenomena easily recognized by anyone. To devise an apparatus for a lower temperature seemed more difficult, because the use of a thermometer is to be avoided. It occurred to me that by immersing a certain definite amount of milk in a







properly proportioned bulk of boiling water, the source of the heat having been removed, the temperature of the milk could be raised to about the desired point, *i.e.*, 75° C. (167° F.). Of course the bulk of the boiling water required depends both on the bulk and the temperature of the milk to be heated. The amount of water in my apparatus is such that in raising the temperature of the milk through 60° C. (108° F.) it loses itself an equivalent of heat, so that when the milk reaches its maximum temperature the water surrounding it is of the same temperature. The apparatus which I present is constructed on this principle of the distribution of heat through two fluids of unequal temperature, and will raise the contained milk through about 60° C. of temperature (from 15° to 75° C.) and keep it at about its maximum temperature for half an hour, after which there is a loss of about one degree every fifteen minutes.

The apparatus consists of two parts, a pail for the water and a receptacle for the bottles of milk. The pail is a simple tin pail with a cover; there is a groove extending around the pail to indicate the level to which it is to be filled with water, and supports inside for the receptacle for the bottles of milk to rest on. The receptacle for the bottles of milk consists of a series of hollow zinc cylinders fastened together; this fits into the pail so that the top of the cylinders are almost level with the top of the pail. I have experimented with other forms of receptacle, including an ordinary tin pail, but find this form the best. Either of two such receptacles may be furnished with the pail, one which will take ten six ounce bottles, or one for seven eight-ounce bottles.

The apparatus is used in the following way. The pail is filled to the level of the groove with water, covered, and put on the stove to boil, the receptacle for the bottles being left out. Now the bottles of milk are filled and stoppered with cotton, and dropped into their places in the cylinders. Sufficient water is now poured into each cylinder to surround the body of the bottle. This is very necessary for conduction of heat. When the water in the pail boils thoroughly it is taken from the stove and set on a mat or table or other non-conductor, the lid is removed and the receptacle containing the bottles of milk is set inside. The lid is now put on again and the whole is allowed to stand half an hour, after which the bottles of milk are put in a refrigerator. In case there is no refrigerator in the house, measurably the same purpose may be attained by replacing the hot water in the pail by cold water, or, better, ice and water. The water must be renewed at frequent intervals until the bottles of milk are of the same temperature as the water used. Water from the faucet at this season, June, is just 20° C. (68° F.), which is the temperature to which it is desirable to cool the milk as rapidly as possible. When cooled, ice may be put in the water in the pail, the bottles being left in place, or the bottles may be taken out and put in a cool place.

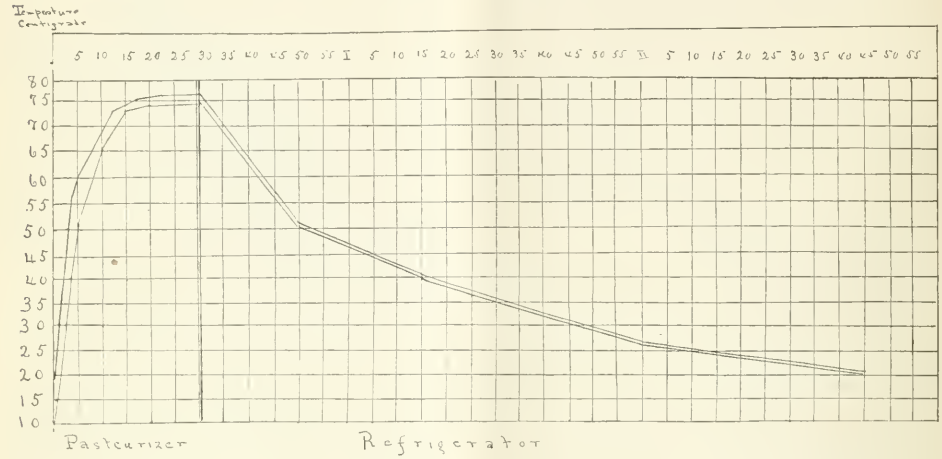
Milk subjected to this process and put immediately into a refrigerator and kept there shows usually no change for several days. A precipitation of caseine takes place in a week or ten days.

I have made careful observations of the temperature of the milk in this apparatus during the various stages of the process, by means of thermometers in the bottles which pass out through holes in the covers. The temperatures I have recorded are the temperatures at the bottom of the bottles, since this part of the milk heats more slowly than the top. The middle bottle does not have exactly the same temperature as the side bottles, but the variation does not exceed two degrees. The accompanying chart shows best the rapidity of the rise of temperature and the constancy of the temperature during the last fifteen or twenty minutes of the half hour exposure. It also shows well that milk at a low temperature is elevated through a greater number of degrees than milk at a higher temperature. This is an important fact and tends to eliminate any error from the uncertainty of the temperature of the milk when put in the apparatus. I have found that the temperature of milk in a refrigerator during warm weather varies from 10° C. to 19° C. (50° F.

to 64° F.), but is usually between 13° C. and 16° C. (55° F. to 61° F.). Such milk would reach about 75° C. (167° F.) in this apparatus. Referring to the chart, we see that the temperature rises through 40° to 45° C. (72° to 79° F.) in the first five minutes, and that a temperature of 70° C. (158° F.) is reached in eight to ten minutes, depending on the temperature of the milk introduced. In leaving the milk in this apparatus half an hour we expose it to a temperature of over 70° C. and 80° C. (158° F. to 176° F.) destroys tubercle bacilli, and, according to Van Geuns, destroys also the typhoid bacillus, the cholera bacillus, and the pneumococcus of Friedlander, also most of the ordinary milk-germs, and does not injure milk.

3. Milk may be pasteurized by simply immersing it in a proper proportion of boiling water, the source of heat having been removed, and leaving it so immersed for half an hour.

Table Showing the Rise of Temperature of Milk at the Bottom of the Bottles in the Pasteurizing Apparatus, followed by the Rate of Fall of Temperature in a Refrigerator. Two Separate Experiments.



(158° F.) for twenty minutes. The cooling in the refrigerator is slow. It requires two hours and fifteen minutes to reach 20° C.

I have made a series of experiments at the Bacteriological Laboratory of the College of Physicians and Surgeons to test the efficiency of this apparatus in the pasteurization of milk. Specimens of milk obtained at different times and from different sources have been examined to determine the number of bacteria contained in one cubic centimetre before and after pasteurization. This was accomplished by planting in gelatine plates. The result of this work is given in the accompanying table from which it may be seen that while the raw milk used contained from 8,000 to 230,000 and more bacteria to each cubic centimetre, the same milk after pasteurization usually contained none.

Table Showing the Number of Bacteria in 1 c.c. of Milk Before and After Pasteurization for One-half Hour.

Number of Experiment.	Number of Bacteria in Raw Milk.	Days of Exposure of Pasteurized Milk.			
		1	2	3	4
I.	9,960	0	0	0	0
II.	90,000	0	0	0	0
III.	28,288	0	0	—	—
IV.	Innumerable	0	—	—	—
V.	18,432	0	0	0	—
VI.	Innumerable	0	0	0	—
VII.	230,400	0	0	1	—
VIII.	100,000	0	0	1	—
IX.	17,384	0	0	—	—
X.	Innumerable	0	1	—	—
XI.	14,900	0	—	—	—
XII.	60,230	0	—	—	—
XIII.	Innumerable	0	—	—	—

Summary.—1. Both clinical and chemical evidence lead us to believe that milk is injured for infant food by the formerly practised methods of sterilization by boiling or steaming, or even by any temperature above 80° C. (176° F.).

2. Pasteurization with a temperature between 70° C.

4. In the apparatus here described the proper proportion between the boiling water and the milk has been calculated and tested, and by the use of the apparatus in practice ordinary milk in summer is found to have been rendered practically sterile, and keeps unchanged in a refrigerator for several days.

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147 WEST FIFTY-SEVENTH STREET.

Tobacco-Smoke.—A large number of investigations have been made by Dr. Tassinari on the influence of tobacco-smoke on the germs of cholera, anthrax, and pneumonia. His method of research was to line the interior of hollow balls with gelatine containing the germs of the diseases named; tobacco-smoke was then passed through these globes for from ten to thirty minutes. The surprising fact was then established that at the expiration of that time the bacilli of true Asiatic cholera and of pneumonia were completely destroyed, whatever the kind of tobacco employed for the purpose. The gelatine was absolutely sterilized by the tobacco-smoke. The anthrax bacillus was more resistant, however, while the bacillus of typhoid was scarcely acted on at all.

Death of the "Human Ostrich."—A dime-museum freak, known as the "human ostrich," died a short time ago in St. Louis. According to the press despatch the post-mortem examination "showed that the stomach, its walls and lining were entirely normal, but literally filled with the nails, screws, tacks, and broken glass which the man had swallowed. A remarkable feature of their presence there was the fact that none of them was encysted, and that there was not one instance of perforation of any part of the stomach or throat."

COUGH: SOME OF ITS CAUSES AND ITS TREATMENT.[1]

By CHARLES D. ROY, A.B., M.D.,

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The euphonic word which forms the caption of this paper is one familiar to every physician and to every household. No gilded mansion nor humble hut has ever been able to bar its doors against its entrance. No clime, no class, no age can claim it as its own, for its name is but the heritage of the whole world. The aged mother whose tottering frame leans upon the arm of a stalwart son has been a victim of its wrath; the little swaddling infant, the first jewel which crowns a mother's maternity, has not escaped the sufferings which it brings. As the family sits around the hearthside at eve, how often does a croupy bark from one of the little ones strike terror in a mother's breast, heralding, as it were, the approaching sleepless night. It is not surprising, then, that I should bring before you to-day a subject so commonplace, and yet one of such extensive domain, for it is always the every-day subjects which seem unlimited in their scope. Nor do I wish to place myself before you as one with narrowed views, for that day is fast being relegated to the past which considers that the knowledge of a physician or surgeon must be limited entirely to his own line of work. They are the best physicians who are able to be specialists in any branch of medicine. The tendency to "hobbies" is now too prevalent among all classes of the medical profession, and often to the detriment of their patients. Some would have us believe that most of the subjective ills of mankind are due to refractive errors or muscular insufficiencies of the eyes, while our brother gynæcologist would take issue with such and prove beyond the shadow of a doubt that the same troubles are caused from a prolapsed ovary or an undue size of the same. The subject I have chosen is one limited to no class of physicians, but especially from the general practitioner does it often draw the most thoughtful consideration. It is not my purpose to bring forward any startling innovation, nor to treat in their entirety the diseases with which cough is associated—a task far too momentous—but simply to group the etiological factors of this symptom in such a manner as to aid us in making a ready and reliable diagnosis.

A cough, according to Landois, consists in a sudden violent expiratory explosion, after a previous deep inspiration and closure of the glottis, whereby the glottis is forced open and any substance, fluid, gaseous or solid, in contact with the respiratory mucous membrane is violently ejected through the open mouth. This act, as we all know, is voluntary or involuntary: voluntary in so far that we can produce the act at pleasure, and involuntary or reflex in that a point is often reached in bronchial irritation or from any other cause whereby, with all our will power, we are unable to stay the act. Kohts, in Landois' Physiology, has located a coughing centre a little above that of the inspiratory in the medulla oblongata. According to this experimenter, the afferent paths are the sensory branches of the vagus, and the efferent lie in the nerves of expiration and those that close the glottis. That there are other paths, there can be no doubt, as can often be seen from clinical experience; though by far the largest amount of work is done by the latter nerves. So important is the par vagum in our coughing miseries, that the refreshing of our minds with the anatomy of its sensory branches will not be amiss.

Dr. Leaming, of New York, has well said, "the par vagum is a chummy, friendly nerve. It is the source of all our friendships. We dine together, meet together, drink together by its influence." The pneumogastric or tenth cranial nerve has its origin from a nucleus in the medulla oblongata along with the ninth and eleventh nerves, and, passing forward, it leaves the cranium through the jugular foramen, being enlarged at the latter point into what is known as the jugular ganglion. Its main sensory branches, and hence those most involved in cough and most important to us, are as follows:

1. The auricular branch, coming off from the jugular ganglion, receiving connecting branches from the glossopharyngeal or ninth, crossing the facial and giving sensory branches to the posterior portion of the auditory meatus and the adjoining part of the outer ear.

2. The pharyngeal plexus is aided in its formation by branches from the par vagum and from the ninth. From this plexus sensory branches supply the soft palate, arch and probably the posterior portions of the inferior turbinate bones.

3. The superior laryngeal, the sesnory nerve to the base of the tongue and all the mucous membrane of the larynx, is pre-eminently the nerve of cough.

4. The pulmonary branches of the vagus join the anterior and posterior pulmonary plexuses, and hence, from this source, supply sensory (cough-exciting) fibres to the whole bronchial system, lungs and pleura.

5. The senscry fibres to the stomach and also to the liver, and through connections with the great solar plexus, probably send fibres to the organs of generation.

From this brief anatomical exposition, we see from what sources irritations may come in producing cough, and being thus fortified in our knowledge, we are better enabled to seek the proper source. The character of a cough depends largely upon the locality and nature of the cause of which it is a symptom. For we must bear in mind that we are not discussing a disease—a distinct entity—but a symptom of a disease or morbid state, and it is the latter condition which determines its character. Various words have been used as descriptive of peculiar kinds of cough, and it is well for us to pause for a moment and consider in our minds the meaning of such adjectives most frequently used, as brassy or metallic, hoarse, spasmodic, jerky, hacking, croupy, raspirg, etc.

When we speak of cause in relation to cough, we of course mean those pathological conditions with which it is associated, by the removal of which the cough ceases. We cannot say that enlarged faucial tonsils always produce a cough, but that they are sometimes a causal factor, we must admit, since a persistent cough often ceases upon the removal of these organs. Hence, in this article, we shall try to consider all those factors which, in the light of clinical experience, have been found to have aided in the production of this symptom. In all diseases of the lungs and pleura cough is a prominent symptom, but to discuss the diseases of these organs would extend this paper beyond a reasonable length; so that, with the exception of a passing remark, the points of the article will be confined to the respiratory tract above the bifurcation of the trachea. To make a classification of causes with distinct lines of demarcation is difficult indeed, but simply to aid us in the study, I have made the following arrangement:

a, **Causes.**—1. Such as are dependent upon an acute pathological state of the respiratory tract. *a*, Lungs and pleura; *b*, larynx and trachea; *c*, pharynx.

a, *Lungs and Pleura.*—In all acute and chronic diseases of the lungs and pleura, cough is a prominent symptom, as one would naturally expect from the anatomical distribution of the pulmonary plexus. How familiar to many of you is the short, dry, jerky cough with the accompanying stitch in dry pleurisy? How, also, the deep basilar cough of pneumonia? With a pulmonary cough there is usually the accompanying expectoration, sometimes labored and even requiring several efforts before it succeeds, while in pleurisy there is nothing to eject, and, consequently, the cough is dry and hacking. In acute and even chronic bronchitis, cough is one of the most distressing symptoms, and one which causes the patient many a sleepless hour. The accumulation of secretions in the bronchial tract is often the most irritating factor,

[1] Read before the Annual Meeting of the Georgia State Medical Association.

for we note how aggravated a cough is in the early morning hours before the expulsion of the secretions which have accumulated during our sleeping moments. Who has not seen this, the most distressing symptom, in phthisis pulmonalis? Cavities in the lungs are always exciting factors, for it is here that the dirty, purulent secretions find a never-ceasing abode. Dr. Leaming, of New York, has recently called attention to the first paper of Dr. G. P. Camman, in which the latter dwelt upon the management of lung cavities by position, thus showing how one of the most harassing symptoms of this dreaded disease could be alleviated. The idea is based upon the fact that if you make the patient lie so that the cavity can be thoroughly emptied by cough and gravity, and he then be made to turn back, allowing an interval for its refilling, he can in this way secure at night several hours of needed rest. If the cavity is not thoroughly emptied, the constant running over, as it were, from the mouth of the reservoir acts as a continual source of irritation.

b, Acute Inflammation of the Larynx and Trachea has, as one of its commonest symptoms, cough, either dry or moist. The congestion thus occasioned by the inflammatory state, together with the increased amount of secretion which is usually present with it, acts as an irritant to the nerve terminals in this locality. Upon this theory, therefore, the richer a portion of the tract is in nervous supply, the more irritable will it be, and the more harassing and persistent will be the cough. Physiologists tell us that a cough cannot start from an irritation in every portion of the respiratory tract, but that there are certain areas only which are supplied with nervous irritability. These are the glottis respiratoria and the bifurcation of the trachea; other portions, they say, as, for example, the true vocal bands, are more or less insensitive. These facts are based exclusively upon the experiments of Kohts and Vulpian. Theoretically, this may all be true; but, practically, we know that cough comes from irritation in any portion of the tract, and in inflammatory conditions we cannot limit this state to any circumscribed area. The character of a cough originating in the larynx and trachea is determined by the character of the existing pathological state or the anatomical formation of the region, according to the age of the individual The tone of all coughs is modified by the condition of the larynx, and especially that of the true vocal bands, whether there be true œdema or exudative material upon their surface. If, with a croupy cough, there is free expectoration, how much more favorable is the prognosis than when the exudation is membranous and clings with deathlike tenacity to the surrounding parts!

The treatment of this symptom is but the treatment of the disease, the main factor being in lessening the hyperæmic condition of the mucous membrane. All remedies for cough originating from this region are given to act locally, whether administered internally, to be eliminated, through the respiratory tract, or applied directly by means of inhalation—a method much the surer. I will not stop to mention all the remedies which have been brought forward as specifics for cough due to this pathological state, but will allude only to those which have proven of most value in my hands. I dislike always to administer any form of opium if it can possibly be avoided, and for this reason I use an inhalation treatment almost entirely. Dr. Bishop, of Chicago, a few months ago, advocated the use of a spray of menthol camphor for various laryngeal troubles, and since that time I have used the remedy with marked success in laryngeal and tracheal coughs

While Dr. Bishop first called attention to the mixture of camphor-menthol, Dr. Hobbs, of Atlanta, was the first to bring prominently before the profession the use of both menthol and camphor in the treatment of nasal diseases.

Triturate together equal parts of camphor and menthol, forming a deliquescent mass, and of the mixture make a 1 to 4 per cent. solution in albolene, and with a suitable oil spray producer allow the patient to inhale it three or four times daily. Another remedy I have used with success is a mixture of terebene in oil vaseline (one drachm to two ounces), inhaled in the same way as the first. In a cough accompanying a severe laryngitis, the compound tincture of benzoin, given by hot steam inhalation, as recommended by Lennox Browne of London, is a most valuable remedy.

c, Pharynx.—In acute follicular pharyngitis, cough of a hemming character is sometimes present, due to the unusually irritative character of the follicles as the current of air strikes its surface. The treatment consists in the thorough destruction of the follicles, best done with the galvano-cautery point, followed with astringent applications of nitrate of silver.

2. Functional, or such as are dependent upon pathological states or deranged functions, more or less chronic: *a*, nasal; *b*, pharyngeal; *c*, laryngeal; *d*, auricular; *e*, gastric; *f*, hepatic; *g*, reproductive.

a, Nasal.—All physicians who have ever worked to any extent in the nasal cavities know how frequently cough is excited when the mucous membrane covering the turbinates is touched with a probe. I have a little patient upon whom a violent fit of coughing is produced whenever a spray is used in the anterior nasal fossæ. This, of course, is reflex irritation but for a moment, and ceases when the probe or spray is removed, but what we see here as a momentary cause becomes a continuous one in enlarged turbinates or septum spurs. Dr. Beverley Robinson, of New York, speaks of coughs of this character as due to posterior hypertrophies of the inferior turbinate, producing pressure and irritation by contact with the septum. Some rhinologists have found areas in the nose more sensitive than others. Dr. John McKenzie, of Baltimore, found the posterior portions of the inferior turbinates the most irritable area, while Mr. Lennox Browne, quoting Hack, found it in the anterior portion. Nasal neuroses, dependent upon abnormalities in the nasal cavities, have of late taken a prominent place as causal factors in producing many symptoms before unknown. That such abnormalities play an important rôle no one can deny who has seen such benefits accrue to patients relieved of these morbid conditions. Deviated septums, spurs, enlarged or hypertrophied turbinates, polypi, etc., can all, by reflex irritation, be a cause of cough, hence it behooves a physician to examine thoroughly into the nasal cavities when no discoverable lesion can be found elsewhere as a causal factor in the production of this symptom. To go into the methods of treatment of the different forms of nasal diseases that cause cough would make a lengthy article of itself; suffice it to say that every source of possible irritation should be found and removed. Hypertrophies are best removed with the galvano-cautery, and polypi should be thoroughly extirpated with the wire ecraseur. All septum deviations and spurs, when prominent enough to be a source of irritation, should be removed by whatever method the operator chooses.

b, Naso pharynx Adenoids, besides an obstacle to free nasal breathing, are sometimes an active source of coughs, as is also an enlarged third or pharyngeal tonsil. The pharyngeal tonsil is a collection of lymphoid tissue, usually in the median line of the vault of the pharynx, and while often overlooked, it is frequently the source of a post-nasal catarrh and a causal factor in the production of the symptom in question. If such a patient be examined with a post rhinal mirror, this globular, red, protruding mass will be seen in the vault, and, in the majority of cases, coated with a ropy, mucous secretion. The only permanent cure for this condition is the complete extirpation of the offending masses, best done with some post-nasal forceps. Adenoids should always be removed as soon as possible, that the attendant train of symptoms may be eradicated.

c, Pharynx.—An elongated uvula is another source of cough, and must not be overlooked, its character being of a hacking nature without expectoration. I dislike to men-

tion the uvula as a causal factor, from the fact of its abuse and the rough treatment it has received at the hands of many physicians. How often has a poor, innocent little uvula of, perhaps, a little increased length, been clipped when no other cause for a cough could be found, and the patient thus be made to suffer for the ignorance of the operator! I have seen several cases where too much of the uvula was excised and thereafter the patient made to suffer the inconvenience of an incomplete closure of the post nasal space in deglutition. One must observe whether the uvula is relaxed or falls with ease upon the base of the tongue before looking upon it as a source of irritation. Cough due to this cause is most troublesome at night when the patient is lying down and the organ falls against the pharynx. The treatment consists in the reduction of the size of the organ, either by medicaments or ablation of a portion. Astringents should always first be tried, and, these failing, provided the length warrants it, abscission can be performed, usually with success. One unaccustomed to the performance of the operation will invariably excise too much and leave the patient in a more uncomfortable state than the one previous. A large portion of the uvula being muscular, it has a tendency to contract, so that its muscular portion should not be cut. In the majority of elongated uvulæ, one will always see between the mucous membrane and the muscle a distinct line of demarcation, and it is here that the line of clipping should be made. Long forceps and scissors are all that is required. Do not cut off too much, is my injunction, if you do not want the unsavory benediction of your patients.

Hypertrophied Faucial Tonsils.—While not frequent, the above condition is sometimes the cause of a persistent cough, especially in children. Dr. Beverley Robinson, of New York, makes mention of the fact, and Lennox Browne, in speaking of a neurotic cough, believes that there is always an objective cause. He says the commonest of these is the irritation of enlarged tonsils, and cites two cases where the removal of these organs was followed by the cessation of that symptom. He further says, "recent experience leads me, even where the tonsils are not enlarged, to suspect adenoid growths in all cases of reflex spasmodic cough. Adenoids and enlarged tonsils so commonly exist together, that a thorough inspection for both is always demanded." Beverley Robinson says, "hypertrophy of this structure (tonsils and adenoids) gives rise to congestion of the lower naso-pharynx, and this increases the sensory excitability." The treatment of this condition is the removal of the enlarged tonsils by whatever method the operator chooses. McKenzie's tonsillitome is a favorite instrument with many and has proven very satisfactory in my hands. The means resorted to matters not, just so they are removed.

Enlarged Lingual Tonsil.—The name tonsil, in this connection, is misleading, for the morbid condition rather signifies a collection of lymphoid tissue, lobulated in appearance, at the base of the tongue, especially at the sides. This lymphoid glandular tissue is sometimes the cause of a harassing, rasping cough, especially in singers or public speakers, among whom this condition is most prone to exist. So common is it among this class that I immediately look for it when singers consult me for treatment. Numerous mention has been made of this condition in the recent literature upon the subject. A. Ruault in the *Archives de Laryngology*, as late as June, 1888, speaks of it, as does also Dr. J. W. Gleitsman, in the New York MEDICAL RECORD for December, 1887. Associated with the cough is a feeling of constriction in the throat and the sensation as if a foreign body were present whenever the act of deglutition is performed. The treatment consists in its removal. If lobulated and large, it can be removed with the wire ecraseur; otherwise, the occasional application of the galvano-cautery will be found more serviceable.

d, Laryngeal.—Under this head must be mentioned the growths, whether external or internal, benign or malignant, which, by their presence, irritate some filaments of the superior laryngeal nerve, and cause cough. Removal of such growths will prove the only satisfactory treatment. The accumulation of a dirty, purulent secretion in the larynx, attendant upon an existing atrophic rhinitis, is frequently a source of irritation and productive of a cough, which is only removed by the cure of the nasal disease.

e, Aural.—Cough, from irritation of the auricular branch of the pneumogastric, is an occasional, though infrequent, occurrence. Many cases have been reported where the removal of impacted cerumen, foreign bodies, etc., from the external auditory canal has relieved a cough of long standing. Such a case I saw a few weeks ago in that of a medical student, who had exhausted all the known remedies for his cough, only to experience relief when a large mass of impacted cerumen was removed. In the last edition of Dr. Roosa's work on "The Ear," he devotes a special paragraph to the consideration of this subject, under the heading of "Ear Cough," and quotes numerous authorities who hold the same view. The treatment consists in the thorough removal of all abnormal substances in the external auditory canal, especially if they be pressing upon the membrana tympani.

f, Gastric Hepatic Reproductive.—Gastric neuroses manifested by reflex irritations in other portions of the body are no uncommon occurrences, especially in the work of the general practitioner. The anatomical relationship to the great solar plexus of nerves makes the stomach a centre from which many nerve impulses originate, and which may thus prove a centre for many reflex phenomena. The three great vital centres, the brain, heart, lungs, are greatly influenced by its morbid condition or any functional derangement of the same. A "stomach-cough" is no infrequent occurrence with children. Flatulency, distention, loss of tonicity, are some of the frequent concomitant symptoms. Young children from under the watch care of their mother frequently overload their stomachs with cakes, candies, fruits, etc., the result of which, manifesting itself at bedtime by an incessant cough, is quickly relieved by an efficient emetic or a good dose of oil. Indigestion plays no small part as a causative factor in this symptom, and hence a well-regulated digestive apparatus is a matter of necessity as well as comfort.

g, Hepatic.—Organic rather than functional derangements of the liver are more apt to act as excitants of a cough. Alcoholic subjects especially are more prone to suffer with this symptom, whether they be suffering with a hypertrophic or atrophic cirrhosis of this organ. A case recently under my charge affords a typical example of the condition in question.

A German, male, aged forty-five, was referred to me by his family physician on account of an incessant cough of the most explosive nature, which had yielded to no course of treatment. The patient gave a good family history, and to all appearances his present physical condition, save the cough, was excellent. By the habit, acquired in his fatherland, he was an excessive beer-drinker with an occasional interspersion of more spirituous liquors. His pharynx was very sensitive to the least manipulation, and vomiting would be produced with the slightest provocation. By degrees a thorough examination was reached. The nasal cavities showed nothing as a causal factor, and the pharynx, save the anæmic, soggy condition of the mucous membrane throughout the oral cavity, which one usually finds in chronic alcoholics, presented nothing abnormal. The retching would cause the epiglottis to appear unusually large, but when quiet was restored to the parts, no pathological changes could be seen within the larynx. I then turned my attention to the stomach and liver, and found him suffering with a condition of chronic gastritis, and, by palpation and percussion, the liver was found to be much enlarged and hardened, with slight tenderness. Whenever firm pressure was made over the hepatic region, a paroxysm of coughing was immediately started. The morbid process

had so far progressed that no remedies succeeded in staying the pathological process. I doubt not but that many of you have often seen a nervous, hacking cough, dependent upon an engorgement and torpidity of the liver, quickly relieved by some hepatic stimulant or mild cathartic. In malarious districts this condition is frequently an exciting factor, and a thorough regimen of treatment must be instituted before the symptoms will abate.

Before closing, I must mention a cough which is sometimes present about the age of puberty, seemingly dependent upon the condition of the reproductive organs or that of the blood. In *The Lancet* of December, 1890, Sir Andrew Clarke had an article entitled, "Remarks on the Barking Cough of Puberty," and cites several cases of this condition occurring in his practice, both in boys and girls. Dr. Leaming, of New York, who has since called attention to this subject, has reported such a condition occurring in a young girl, suffering from chlorosis, following an attack of mountain fever. The late Sir Morell Mackenzie has also reported such a case. That there is a close relationship between certain conditions of the reproductive organs and certain nervous phenomena in other portions of the body, no one, I am sure, will deny, for day by day the correlation of our bodily functions is growing in importance Dr. John McKenzie, of Baltimore, has called attention to certain nasal conditions coexisting with a peculiar state of the reproductive organs, which, from their constancy, do not seem to be entirely fortuitous. In all such cases the treatment must be general, the aim of the physician being to restore the body to as normal a condition as possible by rectifying all morbid states in individual organs.

In speaking of the various causes of cough, I have made no mention of that disease of childhood known as whooping-cough, since my aim has been to consider only those pathological conditions demonstrable on ocular inspection, as irritating factors in the production of this symptom. Whooping-cough is a germ disease, as is the almost universal consensus of opinion, and, like all others of its class, the specifics for its cure are legion.

My task is over, but if I shall incite you to a closer discrimination of the various causes of this every-day symptom, and not to treat all coughs indiscriminately by certain "stock prescriptions," my aim will have been fully satisfied and your patients likewise blessed.

Clinical Department.

DEATH FROM PULMONARY EMBOLISM FOLLOWING OPERATION FOR APPENDICITIS.[1]

By FRANCIS J. SHEPHERD, M.D., C.M.,

SURGEON TO MONTREAL GENERAL HOSPITAL, ETC.

In view of the fact that appendicitis and its complications are yet exciting much attention in both medical and surgical circles, in the Old World and the New, anything tending to increase our knowledge of the subject will, I feel, be acceptable. This is my excuse for reporting a case of appendicitis which, though not successful, is interesting from a pathological point of view.

The number of fatal results following operations for this disease is no doubt much greater than the reported cases would lead us to believe, and death results in many cases, not as an effect of the operation, but because of its too tardy performance, septic peritonitis having already set in. I am convinced that some cases are septic from the first, and that no operation, however early it may be performed, will be successful. Such cases are those where no pus is found, but the appendix, and perhaps the cæcum, are in a gangrenous condition.

The most frequent cause of death after operation for appendicitis is, no doubt, septic peritonitis, but I am not aware that any deaths from pulmonary embolism have been placed on record.

In those cases where the patient has suffered from frequent attacks of appendicitis, and as a result there is a considerable amount of inflammatory tissue about the appendix and cæcum, thrombosis of the iliac veins would very easily take place. Any disturbance at the time of the operation, or afterward, might set free a portion of the thrombus, and this, after passing through the heart, might easily block up the pulmonary artery. Such I imagine was the train of events in the case I am about to relate, and in which the cause of death was verified by post-mortem examination.

James W——, aged thirty-five, bookkeeper, had his first attack of appendicitis in November, 1890. At this time he had rigors, high fever, and vomiting, and his physician discovered a tumor in the right iliac fossa. He was confined to bed for some three weeeks. In the winter of 1891 he had two slight attacks, which caused him to remain in bed a week. In August, 1891, he was again seized with pain, vomiting, and high fever, and again a tumor appeared in the right groin, which was exceedingly tender on pressure. His physician, Dr. Blackader, asked me to see him, and as his condition was serious and the symptoms not abating, I advised immediate operation. He was admitted into a private ward in the General Hospital on August 22d, and operation was at once performed. Before operation his temperature was 103° F.

Operation.—The usual incision was made and the peritoneal cavity opened. To the inner side of the incision a mass was seen which on breaking through its wall discharged a quantity of fetid pus. The cæcum was easily found, and also the stump of the appendix, which had sloughed off and had disappeared. The abscess cavity was carefully cleansed and stuffed with iodoform gauze, which was not removed for three days. The patient went on well for seven days, with a normal pulse and temperature, and was progressing toward recovery most satisfactorily. On the evening of the seventh day he suddenly complained of severe dyspnœa and intense pain, and died in less than an hour.

An autopsy was held next day, when the following conditions were found: "Thrombosis of the external iliac vein, extending into the common iliac, lungs bloodless, and pulmonary arteries blocked with emboli. The thrombus in the iliac veins appeared to be of some standing, and was not of septic origin.

There was no trace of peritonitis, and the abscess cavity, which contained one drachm of sweet pus, was well separated by a line of adhesions from the general peritoneal cavity.

There was nothing to account for the separation of the emboli, as the patient had been making no exertion, and when the accident happened was talking quietly to the nurse.

Note.—In the discussion which followed the reading of this paper Dr. McConnell reported a death from a similar cause after operation for appendicitis; here, however, the separation of the embolus was caused by massaging the upper part of the thigh, because patient complained of a feeling of stiffness and discomfort. Dr. Armstrong also reported a death from pulmonary embolism following operation for appendicitis. In neither of these cases was an autopsy held.

[1] Read before the Medico-Chirurgical Society of Montreal, April 15, 1892.

A Boomerang.—A quack in a Western city advertised that he had treated some thirty cases of diphtheria during the previous month, and had cured every one of them. He was thereupon arrested, and is to be prosecuted by the Board of Health for having failed to report the cases.

A Sure Thing.—Primus: "Young Dr. Neale tells me that in his specialty he has never made a mistake in diagnosis." Secundus: "What's his specialty—autopsies?"—*Judge.*

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THE OLD-TIME FAITH-CURES.

SINCE the year 1844, when A. Gauthier reported his "Recherches historiques sur l'Exercice de la Médecine dans les Temples," a number of studies have been made of sacerdotal medicine among the ancient Greeks. One of the latest of these is by M. Diehl ("Excursions Archéologiques en Grèe, 1891"). These works throw an interesting light upon the practice of medicine in olden times, but they particularly show its close resemblance to the faith-cures of to-day. The temples of Æsculapius began to take a prominent part in the social and medical life of the Greeks at about the time of the Trojan War, and they lasted as institutions until 400 A.D. The faith-cures of old, therefore, officially endured for about one thousand years. The temples of Æsculapius were usually small and modest structures. Like the doctor of to-day, they did not secure great gifts of gold; their reputation was among the poor. They were placed in some salubrious spot and had attached a corps of priests and attendants. The sick came and were placed on couches in the interior, where, after visitation from the priest, they made their vows and went to sleep. It was expected that the god would visit them in their dreams and either heal them or reveal a way for so doing. If a cure resulted the patient deposited some gift, and caused a tablet to be erected describing his disease and its cure, and rendering appropriate thanks to the deity. These gifts and inscriptions remained to ornament the temple and inspire hope and confidence in the hearts of new-comers. Some gave propitiatory offerings, *i.e.*, paid before they were cured. But this seems to have been rather unusual. The ancient Greek was of a frugal mind and only paid for what he got. Archæologists have collected many of the curious votive tablets from these old faith-cure establishments. A Lacedemonian lady had the dropsy. Her mother consulted the god at the temple of Epidaurus and dreamed that she saw him descend, cut off the head of her daughter, then hold up the trunk until all the water ran out. She woke up, went home, and found her daughter well. Another tablet describes the dream of a patient who suffered from cancer of the stomach. The god removed the cancer by a neat and painless laparotomy, and the patient awoke and was cured! If it could only be done that way now! Naturally the priests became somewhat skilful in the practical and real part of medicine. They saw that their patients received healing drugs and followed hygienic ways of living. It was from some of these practical physicians that Hippocrates learned what little he knew of medical art, expunging from it priestly mysticism and quackery.

As time passed and the ancient religion became more of a conscious deception and means of gain the temples of Æsculapius degenerated. They were sometimes started as a business venture by dishonest men, who worked them "for all they were worth," just as is done nowadays. Again, specialism entered the field. The oracle at Delphos, in order to enlarge its revenues, entered the field; the priests of Diana at Ephesus made a specialty of the eyes, and those of the temples of Venus looked after certain kinds of tumors. In order to help along the business later, a great deal of trickery was introduced; finally, human credulity could be taxed no farther, and the temples were abandoned.

In the early days, when conducted by honest priests, the temples of Æsculapius no doubt did much service. They were the sanitaria and consulting centres of the people. Their decline and fall was inevitable as Christianity grew, but it was hastened by the gross abuses of the system.

OPERATIONS FOR CANCER OF THE STOMACH.

IN a critical review of the subject of the surgical treatment of gastric cancer, Dr. A. Guinard (*Archives Générales de Médecine*) goes over the works of the past ten years and reaches some conclusions which are, we believe, wise, and ought to be thoroughly familiar to medical men. There is, he says, no cure for cancer of the stomach by operation. From this we infer that he does not find any case in which relapse has not eventually taken place. This is surely discouraging; still he goes on to say that very much can sometimes be done by the surgeon. One ought, he says, to abandon to medical treatment alone all gastric cancers which are not accompanied by pain, pyloric stenosis, and progressive inanition. One should undertake removal of a cancer only if it is small, movable, and single. These conditions only present themselves at the onset of the disease, hence every possible means should be adopted to recognize the tumor in its earliest stage. An exploratory laparotomy, which is almost harmless, should be undertaken if necessary. If an operation is determined upon, it should, as a rule, be a gastro-enterostomy. This should be the regular operation, a gastrectomy or pylorectomy is the exception. The mortality from these operations oscillates between fifty and eighty per hundred, depending a good deal upon the experience and skill of the surgeon.

Bearing upon this same subject is a recent paper by Dr. Senn, of Chicago, who discusses the question of gastrostomy for œsophageal stricture and cancer of the cardiac orifice. Here somewhat different problems are presented, for in these cases the operation alone is not usually difficult, and a temporary relief is surely obtained. Dr. Senn says: "Gastrostomy for malignant obstruction on the proximal side of the stomach, if performed at a time when the patient is sufficiently strong to survive the immediate effects of the operation, is a comparatively safe procedure, and adds from a few weeks to six or eight

months to the patient's life." "Leakage from the fistula can be prevented most effectually by making the opening in the stomach small, by the use of an inflatable double rubber bulb, through which the feeding-tube reaches the stomach, or by making an oblique tunnel in the anterior wall of the stomach, as devised and practised with success by Witzel." "Mastication of food, as a preliminary step to its introduction into the stomach, satisfies, at least in part, the sense of hunger, which is not always accomplished even by liberal exclusive gastric feeding through the fistula."

The mortality from the operation is about twenty-five per cent.

THE TREATMENT OF HYSTERIA.

In the days of Sydenham, hysteria, or "the vapors," was the most frequent of all chronic diseases, according to that eminent observer. At the present day it is perhaps less common relatively among women, but is more common, or at least oftener observed, among men. The conception of the nature of hysteria has undergone much change since the olden times, when it was thought to be a disorder primarily of the womb. For many years it was taught that hysteria was a reflex trouble; then that it was a convulsive neurosis of a general or constitutional nature. These ideas have of late been much modified, and it is now quite generally agreed that hysteria is a disease of the mind, or a psychosis. The psychology of the condition has been well studied by Janet, Möbius, and others. They note as characteristic phenomena a limitation of the field of consciousness and a disorder of the association processes, as the result of which impressions received are not properly modified and adjusted to previously acquired knowledge. Hence, they become dominant and intense, and disturb the ordinary mental equilibrium.

The conception of hysteria as a psychosis has an important therapeutical bearing. It cuts away the ground from those who would treat the disease as originating in the uterus, the stomach, the blood, or the eyes. In a critical review of the subject of the therapeutics, by Dr. Paul Blocq, of La Salpêtrière, not a word is said of uterine or ocular measures, except to condemn castration. Dr. Blocq divides the treatment into the psychical, external, internal, and treatment of special conditions. The psychical treatment is naturally the most important. It consists essentially in isolation. This measure we are told is approved and taught by Charcot. Curiously enough, no credit is given to Weir Mitchell, and other American physicians, who originated and developed it long before Charcot and his pupils took it up. The other form of psychical treatment is hypnotism, to which Blocq wisely gives a cautious approval. It has value only in certain cases.

The external measures advised are hydrotherapy, electricity, and massage. The hydrotherapy is given daily in the form of a jet, or by the wet sheet and sponge bath. Franklinism is thought to be the most efficacious form of electricity, administered in the form of the bath. In some special types, however, faradism does better. Massage is applied in all its various methods of *effleurage*, *pétrissage*, *tapottement*, etc. In general *pétrissage* is useful in the convulsive forms, *effleurage* in those with contractures.

Little reliance is placed on medication for the psychosis itself. Naturally anæmia, dyspepsia, etc., may call for proper remedies. The bromides are of little value in hysteria, according to the French school, and Charcot even utilizes the drug in diagnosticating hysteria from epilepsy. American physicians do not find it so useless, partly, perhaps, because American hysteria is not of so purely a mental type. Bromide of camphor, valerian, and zinc are advised by Blocq in cases in which there is excessive nervousness and agitation. For the attacks ether and bromide of ethyl may be used.

Dr. Blocq describes a latent form of hysteria, a hysteria minor, hysteria major, and mono-symptomatic forms. The latent hysteria is simply the psychopathic condition of children born of hysterical and neurotic parents. Such children have night terrors, are somnambulic, irritable, choleric, and lack power of attention and control. Professor Pitres advises that they be brought up away from their parents, in the discipline of schools. The advice is certainly excellent. Hysteria minor, or *petite hystérie*, is the common form of the disease, and is characterized by slight convulsive attacks and emotional crises, with various interparoxysmal symptoms. Such patients present few, if any, stigmata of the disease. Hysteria major, as its name indicates, is the most serious form. Its victims suffer from hystero-epileptic seizures, contractures, palsies, anæsthesias, etc., and their treatment usually calls for the combined application of many of the remedies mentioned.

Dr. Blocq disturbs one very common belief among physicians, viz.: that marriage is a good remedial measure for hysteria. It is, he says, quite generally agreed that marriage does more harm than good to hysterical women, and it is not to be advised unless there be special reasons for it. Surgical intervention in the shape of ovariotomy is also strenuously condemned.

The End of a Malpractice Suit.—Dr. A. F. Reed, of Holyoke, was sued by a former patient named Bissonette, who sought damages on the ground that his fractured leg had been improperly set by the defendant. The case was tried about two weeks ago and the jury brought in a verdict for the doctor. The patient, as is usually the case when damages are claimed, had repeatedly disobeyed the surgeon's injunctions, getting up too soon, taking off the splints, etc., and withal there was shortening of less than two inches. The medical testimony was wholly favorable to the defendant, proving that he had managed the case intelligently and skilfully, and that whatever want of success there was arose entirely from the patient's negligence and disobedience to the attendant's orders. We congratulate Dr. Reed on the vindication he has received, while sympathizing with him in the trouble and expense to which he has been put in defending himself from a groundless accusation.

American Medical Editors' Association.—At the annual meeting of the American Medical Editors' Association, at Detroit, Mich., Dr. J. C. Culbertson, of Chicago, was elected President, and Dr. T. D. Crothers, of Hartford, Conn., Secretary.

News of the Week.

Cheap Sterilized Milk for Tenement-house Babies.—An experiment is about to be made, during the coming hot season, in providing sterilized milk for the poor in the vicinity of the Good Samaritan Dispensary. Some charitably-minded ladies and others began in 1891 the operation of a sterilizing plant as a means of teaching the tenement house population on the East Side that something could be done for the protection of infants against some of the germ diseases incident to the hot weather. This plant has been allotted a room at the Dispensary, and milk devoid of germs will be sold below the cost of production, so as to enable it to compete with unsterilized milk.—*New York Medical Journal.*

The Mississippi Valley Medical Association will hold its eighteenth annual session at Cincinnati, October 12, 13, and 14, 1892.

American International Medico-Legal Congress.—At the first session of this Congress, held in New York in June, 1889, a permanent organization was effected and it was resolved to hold the second session on the occasion of the Columbian Exposition. It is therefore proposed to hold the session in 1893, in June, July, or August of that year, and, if the necessary arrangements can be made, in the city of Chicago. Due notice of the four days selected and the place will be given hereafter. A committee will formulate and announce the order of the proceedings, the subjects to be discussed, the arrangement and classification of the papers to be read, and the discussions thereon, which will be sent to all members and published in the journals. The enrolling fee, which will entitle the member to the "Bulletin" of the Congress, will be $3. All those who desire to enroll themselves or to read papers at the meeting may communicate with the president or secretary in New York City. The officers of the Congress are Mr. Clark Bell, *President;* Mr. Moritz Ellinger, *Secretary;* and Drs. Frank H. Ingram and W. J. Lewis, *Assistant Secretaries.*

Chicago Pathological Society.—At the recent annual meeting of this Society the election of officers was held, resulting in the choice of Dr. C. D. Wescott for President, and Dr. Elmore S. Pettyjohn for Secretary. The past year has been the most prosperous one in the history of the Society. Its membership has increased twenty-five per cent. and the attendance at the meetings has been uniformly good.

St. John's Guild.—Active preparations are being made by St. John's Guild for this season's work for the relief of the sick poor children and their mothers in the tenement-house districts during the summer months, and the Guild's Floating and Seaside Hospitals will be in full operation at an early date. These institutions are absolutely free, without the least discrimination as to color, creed, or nationality, and are supported entirely by voluntary contributions. Those desiring to aid in this useful charity may send their contributions to Mr. W. L. Strong, Treasurer, 501 Fifth Avenue, New York City.

Buffalo Ophthalmic Hospital.—A new hospital for the treatment of diseases of the eyes has recently been opened in Buffalo. The greatest pains are to be taken to exclude from its benefits any but the really poor, and if it succeeds in this praiseworthy object it will be an institution worthy of imitation throughout the length and breadth of this fair land.

International Dermatological Congress in Vienna.—The second meeting of the International Dermatological Congress will be held in Vienna from September 5 to 10, 1892. Many of the most distinguished representatives of dermatology and syphilography from all countries have promised to present papers, and the indications are that the meeting will be a great success from a scientific standpoint. The Committee on Organization, through the President, Professor Kaposi, has extended a cordial invitation to the members of the American Dermatological Association, and of the New York Dermatological Society and others interested in dermatology in this country to be present. The membership fee ($5) should be sent, with titles of papers intended for presentation, to the Secretary for North America, Dr. Prince A. Morrow, 66 West Fortieth Street, New York, or to the Secretary-General of the Congress, Dr. Gustav Riehl, Wien 1-20, Bellaria Strasse 12.

Treatment of the Tzar's Consumptive Son.—The Grand Duke George, the Tzar's second son, who, ever since his enforced return, through illness, from his Indian tour, has been under medical treatment for pulmonary disease, has been passing the winter at Abbas-Tuman in the Caucasus. A private letter from that place states that his Imperial Highness is undergoing a most remarkable course of treatment. The walls in his apartments are bare and unpapered, the furniture is of plain wood or cane, without upholstering or stuff-covering of any kind, and his bed consists only of the thinnest of mattresses. Throughout the winter only a very moderate fire has been kept up, while the windows of the Grand Duke's rooms have been continuously open. His attendants have suffered dreadfully from the cold; but his medical advisers hold that this low temperature is very beneficial to their imperial patient, as it tends to destroy the bacillus and prevent the formation of tubercle. They maintain that the progress of the disease has been arrested, and express hopes that, if the treatment which they prescribe is persevered with, the Grand Duke will in two years' time have completely recovered.

What to Do at Saratoga.—Rise at 7 A.M.; go to the spring (Congress, Carlsbad, Hathorn, or Empire), drink a glass of water, hot; walk for ten minutes; another glass of water, hot or cold; walk for half an hour to an hour. Breakfast, consisting of milk, eggs, meat, coffee, or tea diluted; avoid raw fruit, hot rolls, or fresh bread. Then go to stool. At 11 A.M., one or two glasses of Vichy (medium), walk for half an hour or so. Dinner at two; eat no fried meats or fish, no salads, no corn, no pastry, no raw fruit. Take a rest or a nap till five, then a walk or a drive. At six, one glass of Vichy. Supper at 7.30; light diet—milk, toast, eggs, stewed fruit. At nine, another glass of Vichy, and retire at ten. This plan is to be kept up for not less than three weeks, avoiding all mental excitement. If there is a rheumatic tendency, the Red Spring or magnetic baths three or four times a week Vichy with meals and Geyser at night have given me sat

isfactory results. Diabetics and patients with uric-acid diathesis do extremely well on Vichy or Kissingen in large quantities. In chlorotic and anæmic patients I have been much pleased with the effects of Columbian or Washington (the iron waters), being careful to tell my patients only to drink these waters from one and a half to two hours after eating, for, unless these directions are given, the patients always complain of severe headache after taking the water. These waters just mentioned I have found most satisfactory; but there is no doubt of the efficacy of many of the others, and the paper would be too long were I to attempt to describe the uses of each of the twenty-eight springs.—Dr. L. Rau, *New York Medical Journal.*

Warts and Porpoises.—Dr. Louis Lewis writes to *The Times and Register:* "Last month a gentleman called on me to be examined for life insurance. I noticed that the backs of his hands and fingers presented a large array of unsightly warts ('verrucæ vulgaris'), which he said had hitherto resisted all treatment, either returning or refusing to go. He went to the West Indies, and, during the voyage, shot a porpoise, which was hauled on deck, and, in cutting up the carcass, his hands were freely besmeared with the blood. To his surprise, every wart vanished in short order, and none have come back. Returning to Philadelphia to day, he presented himself to me with a perfectly clean pair of hands. I have often heard that pig's blood will remove warts, and have received the news with a large grain of salt; but here is a singular coincidence, to say the least of it, if only in the resemblance between a porpoise and a pig. I should like to give this 'remedy' a trial; but few druggists keep porpoises in stock, and I do not think I could shoot one."

International Medical Magazine is the title of a new monthly issued in Philadelphia, by the J. B. Lippincott Co., and edited by Dr. Judson Daland.

It is Reported that Dr. Robert Koch has interrupted his bacteriological studies by marrying a popular danseuse.

Corn-meal as an article of diet has been introduced into Germany largely through the instrumentality of Colonel Murphy, and "Murphy-brod," as it is called, is now sold in nearly all the bakeries.

Death of Dr. William Aitken.—Sir William Aitken, Professor of Pathology in the Army Medical School at Netley, died on June 27th. He was a member of the Royal Imperial Society of Physicians of Vienna, the Society of Medicine and Natural History, of Dresden, and the Imperial Society of Medicine, of Constantinople. He was made a knight on the occasion of the Queen's Jubilee in 1887. Sir William was the author of a standard medical text-book, in which he expounded for the first time the use of the thermometer as a means of determining the temperature of the body in cases of fever. He volunteered for service in the hospitals of Turkey during the Russian war and, afterward at different times, held several positions in the English army medical service.

Not Chloroform but Chloral.—Dr. George C. Mosher, of Kansas City, Mo., writes: "In your very thorough abstract of the proceedings of the recent meeting of the American Medical Association, in the issue of June 18th, p. 696, I am made to say in a paper on 'Delayed Labor,' read before the Section on Obstetrics: 'Chloroform by the rectum might prove useful,' when what I really said was: 'Chloral hydrate by enema was regarded as of greatest value in these cases.' Later on: 'Chloroform in the second stage of labor given to obstetric anæsthesia was frequently indicated.'"

The New York Physicians' Mutual Aid Association is now able to pay $1,000 upon the death of a member, which is the full amount allowed under the by laws. At present the number of members upon the roll is 1,106.

Regeneration of Bone.—Dr. Ricketts, of Cincinnati, is engaged upon a translation of Ollier's work on "The Experimental and Clinical Study of the Regeneration of Bone and of the Artificial Growth of Bony Tissue."

Dr. Weir Mitchell has made a discovery, not in the line of physiology but of poetry. He has found a gentleman who writes poetry with thought in it, and our distinguished colleague justly celebrates the event.

Dr. John Ridlon, who recently removed to Chicago from this city, has been appointed Lecturer on Orthopedic Surgery at the Chicago Medical College.

Reviews and Notices of Books.

Treatise on Gynæcology, Medical and Surgical. By S. Pozzi, M.D., Professor Agrégé à la Faculté de Médicine; Chirurgien de l'Hôpital Lourcine-Pascal, Paris; Honorary Fellow of the American Gynecological Society. Translated from the French edition under the supervision of and with additions by Brooks H. Wells, M.D., Lecturer on Gynecology at the New York Polyclinic; Fellow of the New York Obstetrical Society, and the New York Academy of Medicine. Vol. II. With 174 Wood Engravings and 9 full-page Plates in Color. Pp. xvi., 583. New York: William Wood & Co. 1892.

The favorable impression created by the first volume of this work is strengthened by the second, which follows it with commendable promptness. The importance of diseases of the adnexa is fully recognized, more than one-half of the volume being devoted to this subject. The almost uniform association of disease of the tube and ovary is indicated by the titles of Chapters II. and III., "Oöphoro salpingitis without Cystic Tumor," and "Cystic Oöphoro-salpingitis." The expression "ovaritis," by the way, is not preferable to "oöphoritis." Some of the compound words in these chapters are rather ponderous, *e.g.*, "sclero cystic degeneration," "micro-cystic degeneration," "obstetrico-surgical exploration," etc. Under the chapter on "Perimetro salpingitis" the author includes the conditions described as pelvic peritonitis and cellulitis. He believes that the infection in phlegmon of the broad ligament may be secondary to inflammation of the tubes, or to a peri lymphangitis, a view which indicates his conservative attitude.

Four chapters (V. to IX.) are devoted to ovarian tumors, two of these dealing with their surgical treatment. Chapter X., on "Genital and Peritoneal Tuberculosis," contains a scholarly discussion of this subject, which has assumed so much importance of late years. In considering the etiology of hæmatocele, emphasis is properly placed upon the fact that "the great majority of cases start from some tubal lesions" (ruptured ectopic gestation?). The chapter on "Extra uterine Pregnancy" presents a good *résumé* of the subject from a surgical stand-

point. Chapter XV., entitled "Cicatricial Fistulæ of the Vagina," is devoted to the operative treatment of vaginal fistulæ, preference being given to Bozeman's and Simon's methods. Emmet's work certainly deserved some recognition here. We marvel at the author's silence. This chapter is particularly rich in illustrations. The chapter on "Laceration of the Perineum" is properly supplemented by a description of Emmet's method of posterior colporrhaphy, written by the editor. The flap-splitting method is thoroughly described, as well as Martin's and Hegar's operations. The illustrations are particularly good, and we note with pleasure Mundé's excellent colored plates. The two concluding chapters, on "Disorders of the Urinary Tract" and "Diseases of the Rectum and Pelvis," translated from Auvard's recent work, supply a deficiency which was apparent in the French edition of Pozzi. The carefully prepared general index is a decided improvement on the original.

We have already indicated the chief points of excellence in Dr. Wells's edition, and need not repeat what we said in the review of the first volume. Suffice it to say that, as an index of the present status of gynecological surgery, the work is almost without a rival. While the unprejudiced American reader is willing to admit that for a foreigner Pozzi shows an unusually wide acquaintance with the work of our progressive surgeons, he can also understand that it is only natural that the author should not assign the same importance to certain distinctively American operations (notably trachelorrhaphy) as our own writers. The editor has, however, supplied many of these omissions as well as he could do without showing too great a desire to intrude his own personal views. Such criticisms and additions as he has seen fit to make have been made in an admirably discreet and modest way, which deserves our commendation. He has substantiated the claims of his countrymen wherever this has been necessary, yet without being led into the fault of bragging, which has been so often criticised by foreigners, and has detracted from the value of some of our best work in gynecology.

A Primer of Materia Medica for Practitioners of Homœopathy. By Dr. Timothy Field Allen. 12mo, pp. 408. Philadelphia: Boericke & Tafel. 1892.

"This Primer," as its preface indicates, "aims to present the characteristic features of the most important drugs used by homœopathic physicians." It may serve to refresh the mind of a physician when away from his complete symptomatology, it will help him discriminate when studying an unfamiliar pathogenesis. In its preparation comparisons "only" are admitted. Arranged according to this plan it will evidently fulfil its mission.

A Treatise on Diseases of the Nose and its Accessory Cavities. By Greville Macdonald, M.D. Lond., Physician to the Hospital for Diseases of the Throat. Second Edition, 12mo, pp. 369. London and New York: Macmillan & Co. 1892.

The second edition of this work appears within a year from the issue of the first publication. Numerous important additions have been made, emphasizing the author's endeavor to incorporate in his treatise everything worth knowing on the subject. Among the important additions which have been made may be noted those under croupous rhinitis, cysts of the middle turbinated bone, idiopathic rhinorrhœa, nasal asthenia, and a full chapter on nasal neuroses. The subjects are treated on the basis of personal experience of the author, and are consequently viewed from a practical stand-point. While fully appreciating the significance of certain well-recognized pathological conditions of the nasal organs, there is a judicious conservatism regarding many of the so-called radical operative procedures which marks the writer as not only a progressive rhinologist, but a safe operator. His views of the pathology of the different affections are eminently sound, and in keeping with those of the advanced workers in his specialty. The style of writing is pure, terse, and forcible, and gives an additional charm to the work. The wood-cuts are admirably made, and the general typographical excellence of the work is everything that could be desired. As a contribution to this department of surgery the book is destined to keep its well-earned reputation as an authority.

The Science and Art of Midwifery. By William Thompson Lusk, A.M., M.D., Professor of Obstetrics and Diseases of Women and Children, Bellevue Hospital Medical College. New Edition, revised and enlarged. 8vo, pp. 761. New York: D. Appleton & Co. 1892.

From its first appearance Professor Lusk's work became an authority in its department. It has so far maintained this reputation that its fourth edition comes to us within a period that is covered by the first edition of many others. In the present edition there are many evidences of radical change in views of pathology and treatment which were made necessary by recent advances in the obstetric art. Not the least of these teachings have been those referring to judicious antiseptic precautions, especially in connection with those newer and more useful surgical procedures for "complications formerly regarded as beyond the pale of human help." It is needless to say anything more regarding this treatise than that it fully maintains its former reputation as a thoroughly scientific and comprehensive treatise on the subject of which it treats, and that it is destined to keep its place as the leading American system of obstetrics. The scientific reasons for certain procedures are so clearly given and so tersely stated that their practical application to emergencies on hand do not admit of question. The treatise is complete in every way. Its illustrations are numerous and well executed.

The Annual Report of the State Board of Health for New Hampshire, for the Year ending October 31, 1891. 8vo, pp. 271. Concord: I. C. Evans. 1891.

This volume contains several interesting reports, notably those upon the sanitary condition of county almshouses, asylums, and jails, prevention of typhoid fever, the sewerage of New Hampshire towns, and the milk supply.

A Text book on the Practice of Medicine, for the Use of Students and Practitioners. By R. C. M. Page, M.D., Author of a Chart of Physical Signs of Diseases of the Chest, Professor of General Medicine and Diseases of the Chest, New York Polyclinic, etc. 12mo, pp. 568. New York: William Wood & Co. 1892.

It is so much the fashion in these days of epitome to produce small books in place of large ones, and thus omit essentials of principles and detail that the student is naturally prejudiced at attempts in such directions. Professor Page's work is, however, an exception to this rule in every important particular. It fulfils its aim admirably and satisfactorily. Herein are given the results of a long experience in clinical teaching and a thorough appreciation of the needs of the student and practitioner. The arrangement of subjects is simple and comprehensive. Each disease in the domain of internal medicine is treated from the practical stand-points of etiology, pathology, symptomatology, prognosis, and treatment. Especially in the latter has the author succeeded in giving a practical turn to his teachings and in adding a unique value to his work. While his descriptions of lesions and physical signs are accurate and sufficiently full, his therapeutics prove him to be a teacher more than ordinarily qualified to apply his principles to the sound common sense practice of the day. Altogether it is one of the best works of its kind, and is destined to have a large sphere of usefulness when its many excellences as a safe guide-

book are becomingly appreciated. The reader will find many admirable prescriptions scattered through the text, and will feel grateful for many clinical suggestions which are rarely found in a work of this kind.

Outlines of Zoölogy. By J. Arthur Thomson, M.A., F.R.S.E., Lecturer on Zoölogy in the School of Edinburgh. 12mo, pp. 631. New York: D. Appleton & Co. 1892.

This is a very compact and concise volume upon the subject of which it treats, and embodies in its generalization, systematic arrangement, and treatment of detail, everything that can be expected in a comprehensive manual. Tracing as it does the primitive organism of the simple cell to the more complex organizations, it carries the student, by logical and systematic arrangement, through the different classes and types of animal life, giving him an intelligible idea of the evolutionary element that pervades the entire system of development The style is lucid and leaves nothing to be desired in intelligible description or practical demonstration. There are thirty-two full page illustrations, which still further add to the value of the work.

Chirurgische Technik, Ergänzungsband zum Handbuch der Kriegschirurgischen Technik enthaltend die übrigen Operationen. Von Dr. Fr. von Esmarch, Professor der Chirurg. in Kiel, und Dr. E. Kowalzig, vorm. 1. Assistant d. Chirurg. Klinic, mit 520 Holzschnitten. 12mo, pp. 372. Kiel and Leipzig: Lipsius & Tischer. 1892.

This work, on operative surgery, is one of the most practical and comprehensive that has been published for a long time. The arrangement is admirable, the descriptions of the different operations are terse, and yet full enough to act as an intelligible guide to the operating surgeon, while the essential details are enforced in a manner that cannot fail to be impressive. All the newer methods of the advanced school are duly described, and their practical applications, founded on the extensive experience of the authors, are given with an impartiality of relative merit that gives them a unique value. The illustrations are, however, such a leading feature that it would appear amiss not to refer to their peculiar excellence in bringing out the salient points of technique which every operator esteems of such value and importance. To such of our surgical readers as are conversant with the German language this admirable book will be an invaluable addition to their libraries.

Fifteenth Annual Report of the Board of Health of New Jersey, 1891. 8vo, pp. 489. Trenton, N. J.

This "Annual Report" is as usual filled with interesting material for the student of public health. The reports from the different local boards of the State are instructive and suggestive, while the papers on school hygiene, vital statistics, and sewerage are models of their kind.

Traité Pratique de Gynécologie. Par Dr. A. Auvard, Accoucheur des Hôpitaux de Paris. Avec 525 Figures dans le texte, et 12 Planches en couleurs hors texte. Pp. 792. Paris: Octave Doin, diteur, 8 Place de l'Odéon. 1892. (A Practical Treatise on Gynecology. By Dr. A. Auvard, Obstetrician of the Paris Hospitals. With 525 Illustrations in the Text, and 12 additional Colored Plates. Pp. 792. Paris: Octave Doin, Editor, 8 Place de l'Odéon, 1892.)

This new French work is a worthy rival of Pozzi's as regards the freshness and beauty of the illustrations, though it cannot bear comparison with it from a scientific stand point. Although it contains much that is valuable to the specialist, it is too bulky in size and a little too pedantic in some places to become generally popular. We refer particularly to the chapters bearing the high-sounding titles "Abdominopathies Simili-génitales," "Emmenologie," "Genitalite," which in plain English mean simply reflex neuroses, disorders of menstruation, and inflammatory affections of the uterus and adnexa.

The arrangement of subjects is somewhat peculiar, though not without its advantages, the chapter on diagnosis being placed at the end, instead of at the beginning. Chapter IV., on affections of the external genitals (always a favorite subject with French writers), includes a *brochure* on eruption, especially the syphilides, which is beautifully illustrated with no less than seven colored plates. The chapter on inflammation of the uterus, adnexa, and peri-uterine tissues is ingenious and suggestive, the central idea being that septic and specific infection are transmitted along the continuous mucous lining of the genital tract to the peritoneum.

The recognition of seven distinct varieties of metritis, however, only leads to confusion. The section on "Ulcerations of the Cervix" preserves the old errors which we thought had been generally abandoned. The two time-honored plates representing the different forms of laceration of the cervix should be credited to Mundé, not to Mouer. Fig. 8, Plate XII. (by the author), certainly represents a simple erosion, *not* epithelioma. The subject of trachelorrhaphy receives better treatment than in most foreign works. This varied chapter concludes with a description of vaginal hysterectomy as performed by Péau and other French surgeons for the cure of chronic endometritis, salpingitis, and peritonitis, an operation which will never commend itself to American operators, in spite of the fact that Péan is credited with fifty operations without a death. The chapters on uterine and ovarian tumors, on affections of the urinary tract and of the rectum are very good. The chapter on sterility is sufficiently explicit, without entering into those prurient details in which some of our French *confrères* seem to delight. We have no hesitation in commending M. Auvard's book as a worthy example of the progress of modern gynecology. With few exceptions he is clear and concise in his style, and possesses the happy faculty of describing surgical operations briefly and to the point. As an artist he is unrivalled. The most valuable feature of the book is the number and originality of the illustrations. Every subject is illustrated by ingenious diagrams, which render details unnecessary. This is a new departure which deserves especial commendation.

Transactions of the American Orthopedic Association. Fifth Session. Vol. IV. 8vo, pp. 403. Philadelphia. 1891.

This volume is a creditable one in every respect, contains a number of very valuable and practical papers, with fine illustrations, and will prove of great value to the student of this growing specialty.

Miner's New Complete Obstetric Record, Combining with the Usual Record all desirable Medical Statistics, together with a Medical History of the Pregnancy and of the Life of the Child, whenever these are Medically Noticeable. Pp. 124. Ann Arbor, Mich.: Joel A. Miner.

This is a book which will prove most convenient for the general practitioner, since it includes the necessary memoranda within a remarkably small space. Each page provides for the recording of seven births, or 868 in the entire book, so that it will last almost a lifetime. We commend it as one of the handiest little record-books of the kind which we have seen.

Professor Emil Fischer, of Würzburg, is to have a new chemical laboratory, the plans of which have recently been prepared. The estimated cost of the building is $150,000.

For Basedow's Disease, a homœopathic physician recommends nux moschata (nutmeg).

Society Reports.

American Medical Association.

FORTY THIRD ANNUAL MEETING.

Held in Detroit, Mich., Tuesday, Wednesday, Thursday, and Friday, June 7, 8, 9, and 10, 1892.

SECTION IN PRACTICE OF MEDICINE.

THIRD DAY, THURSDAY, JUNE 9TH.

The Genesis of Pneumonia.—This was the title of a paper read by DR. W. W. PENNELL, of Fredericktown, O. The great question is as to whether pneumonia is a general fever or a local disease. Bacteria, the writer believes, play only a secondary part as a causative factor. The inflammation produced experimentally by pure cultures of this germ differs from that of the primary cultures. There is not an exact analogy with the so-called specific diseases, and our treatment is not such as to carry out this view. The infectious character of the disease is not observed in country districts. As against this specific character are the following arguments: 1. More than one germ is found. 2. The patients are liable to subsequent attacks of the disease. 3. It is not contagious. 4. There are no prodromata. 5. There are no sequelæ as in typhoid fever. 6. There is a distinct crisis unless peri-infiltration or abscess results. If the exudate can be kept in the vesicles—in quarantine as it were—it will lose its power to infect. 7. Antiphlogistic treatment will often abort the disease.

The causes of the disease may be enumerated as follows: 1. Cold, merely, is not a cause. 2. Continued exposure and exertion, with wide thermometric range. 3. The "dust chill," often felt by farmers after threshing grain. 4. As a sequel of lowered vitality due to vicious habits, especially alcohol and venery. 5. Inhalation of dust and foreign bodies. 6. Bad general hygiene, poor sanitation, enervating habits, etc. 7. Some persons and families have a predisposition. 8. No sex or age is exempt.

The three factors, then, in pneumonia are a predisposition, a loss or lack of normal tissue resistance, and an exciting cause.

DR. BAILEY, of Kentucky, believed that the typical history points to a definite cause. The fever terminates irrespective or independently of the local condition. The physical signs show more complete infiltration the day after the crisis of the disease than the day before.

The Cardiac Indications in the Treatment of Pneumonia.—DR. J. M. ANDERS, of Philadelphia, read a paper on this subject. The causes of this cardiac weakness may be threefold. We may have an absorption of toxic ptomaïnes as a result of the disease process, with a weakening of the heart-muscle. There may be pulmonary obstruction, produced by the presence of the exudate acting as a local barrier to the integrity of the circulation. Finally, we may have the formation of cardiac thrombi, which are found in the right ventricle. The latter becomes dilated and thus there is failure of heart-power.

The signs of the muscular degeneration appear as a feebleness and shortening of the first apex-sound, and a similar condition of the aortic second sound. The pulmonary second sound may be accentuated, at least temporarily. Here alcohol in moderate doses is indicated. It stimulates the cardiac ganglia, the respiration, and the nerve-centres. It should be followed up by strychnine, which remedy has a well-known stimulating effect upon the cardio-pulmonary apparatus. Digitalis is to be used very cautiously, if at all. It may, by lengthening the period of diastole, favor in some cases the nutrition of the heart-muscle.

For the local engorgement cups, leeches, and especially ice-bags, are profitable. The writer distinctly deprecates the use of veratrum, aconite, antimony, and similar cardiac sedatives. To control any cardiac overaction morphine is the remedy *par excellence*. Occasionally, but rarely, is venesection necessary. If there is much consolidation, with a good heart, veratrum can be cautiously exhibited.

In regard to the temperature, our aim should be to reduce it without reducing heart-force. A fever of 104° F. needs no antipyretic measures. Beyond that limit we are to employ cold sponging, and from sixteen to twenty grains of quinine daily. The coal-tar products come under the ban, for they are cardiac depressants, just what we wish to avoid.

To meet the second indication, viz., the obstructed pulmonary circulation, we must remember, first of all, that the consolidation of a single lobe does not greatly interfere with breathing; but if we notice that the pulmonary second sound is losing its sharp accentuation, and is gradually becoming weaker, we have a double duty to perform. We must increase the power of the heart and deplete the lung. For this purpose nitrites of any sort alone are useless. Cups and venesection alone prove adequate. Here we find an indication for the employment of digitalis combined with nitro-glycerine.

The formation of cardiac thrombi is probably more frequent than is commonly believed, and is often associated with the other two factors. In this disease the fibrin-forming elements are increased. The signs of this condition are not difficult to recognize. The impulse is irregular. The area of dulness runs beyond the right of the sternum. There is a systolic bruit heard at the xiphoid cartilage, transmitted up and to the left. The ammonium salts are the only remedy that we have with which to affect the fluidity of the blood. These should be freely administered.

DR. BAILEY believed that phenacetin could be safely used as an antipyretic in pneumonia. It was as efficient as external applications of cold water, and no more depressing to the heart. He did not believe in blood-letting; never saw a case of pneumonia in which, in his opinion, venesection was indicated. He doubted the power of the ammonia compounds to dissolve clots already existing, but thought that the formation of the latter might thereby be prevented.

DR. TRUAX, of New York, favored venesection.

DR. HERRICK, of Cleveland, thought that the antecedents of pneumonia were to be found in perverted action of the abdominal organs.

DR. DIDAMA, of Syracuse, N. Y., thought that venesection was good for those cases in which there was extreme cyanosis, with a watery, prune-juice expectoration.

DR. MUSSER, of Cincinnati, regarded the disease as specific and infectious. The three remedial agents required were, in his judgment, cold, venesection, and rest. To combat the inflammation the first two are employed. The indications for venesection are, the physical signs, the spreading of the hepatization to new areas of lung tissue, and the altered relations between pulse, respiration, and temperature. Strychnine might be used hypodermatically. Digitalis was not of much service. Alcohol and ammonia (the former as champagne) held a high place in his estimation. For the rest and freedom from worry nothing approached morphine in value.

The paper was further discussed by Drs. Greenway, of Kentucky, and Pennell, of Ohio.

Darwinianism and Disease.—DR. HUTCHINSON, of Des Moines, Ia., read a paper on this subject. The leading idea was that the majority, if not all, of pathological processes are merely illustrations of various phases of evolution, and at times of benefit to animal cells and to the body at large. Reversion of type often takes place, and is followed by corresponding disadvantages. Numerous illustrations were given showing the practical application of these views to the recognition of apparent deformities in the body structure and anomalies in disease.

Tissue-group reversions might be either caseous, calca-

reous, fatty, or fibroid. These might all be characterized as vital action gone wrong. Reproductive reversions were tubercle, gumma, benign growths, malignant growths, and hypertrophy. If the malignant reversion occurred in connective tissue we had a sarcoma, with its round or spindle-shaped cells; if in the glandular or epithelial layers, a carcinoma, which might be described as "a parody on glandular tissue."

From all this we must believe that there is another factor in disease than the germ. Lowered vitality is concerned therein, and our treatment should be to improve nutrition and so elevate vitality that the normal processes of bodily evolution shall go on undisturbed.

On the Analogy Between Acute and Idiopathic Pleuritis and Acute Artieular Rheumatism.—A paper with this title was read by Dr. E. L. Shirley, of Detroit. The pleural as well as the synovial and other serous membranes spring from the same primordial layer—the mesoblast—and ultimately develop into the same endothelial lining. Hence they would naturally be alike affected by any pathological process. On the other hand, there is a correspondence between the phenomena, characteristics, and general clinical history of the two diseases. The presence of a pleuritic complication in rheumatism may be suspected when we have fugitive pains in the side, transient respiratory embarrassment, or sudden exacerbations of temperature unattended by any increase in joint disturbance. Often these appearances are regarded as due to pericarditis or endocarditis, when they are really of pleuritic origin.

Furthermore, the results of treatment are corroborative of the view expressed as to the identity of the two affections. Sodium salicylate is the remedy *par excellence* for this condition of the pleura.

Dr. Stockton, of Buffalo, spoke of the causes of pleurisy associated with, and preceded by, articular rheumatism. The former trouble may be worse than the joint affection.

Dr. Atkinson, of Baltimore, thought that while the relation between the two diseases might be true in theory, the revelations of the dead house negative the idea of there being any great amount of pleurisy in these rheumatic cases. Most of our cases of pleurisy cannot be explained on the rheumatic theory. In pericarditis we find pleuro-pericardial sounds which may be mistaken for a simple pleurisy.

Dr. Collins, of London, Ontario, remarked that sodium salicylate will often cure inflammation in any serous membrane. The remedy can be regarded as a true germicide.

Additional Evidences of the Value of Forced Respiration; Fell Method in Opium Narcosis.—Dr. Geo. E. Fell, of Buffalo, read a paper on this subject. In addition to the nineteen cases previously reported, the author gave brief notes of five additional ones. He thought that this method of resuscitation would be applicable to drowning or asphyxia from any cause. His apparatus, with the face mask, was exhibited, and its method of use demonstrated.

The following papers were announced, but not read: "Epilepsy," by Dr. M. M. Leahy, of Chicago; "A Case of Fermentative Poisoning," by Dr. J. T. Axtell, of Hartford, Conn.; "Conditions of the Heart and Pulse in Phthisis," by Dr. N. S. Davis, Jr., of Chicago; "Pneumonia as a Blood Disease," by Dr. Ephraim Cutter, of New York; "Diet and Regimen in Pulmonary Consumption," by Dr. Edward F. Wells, of Chicago, Ill.; "A Clinical Note on Rotheln: Period of Incubation," by Dr. Chas. A. Hough, of Lebanon, O.; "Kidney Colic," by Dr. Ferdinand King, of New York; "Europhen: with Clinical Reference to Europhen and Europhen-Aristol," by Dr. John V. Shoemaker, of Philadelphia, Pa.; "A Few Notes on the Mechanical Therapeutics of Osseous and Medullary Lesions of the Spine," by Dr. Thomas H. Manly, of New York; "Phenacetine, with Special Reference to its Effect in the Nervous Sequelæ of Grippe," by Dr. W. F. Hutchinson, of Providence, R. I.

Election of Officers.—*Chairman*, Dr. Charles Stockton, of Buffalo, N. Y.; *Secretary*, Dr. George Webster, of Chicago, Ill.; *Executive Committee*, Drs. Hobart A. Hare, of Philadelphia; Isaac Atkinson, of Baltimore; N. S. Davis, Jr., of Chicago.

SECTION ON SURGERY AND ANATOMY.

Third Day, Thursday, June 9th.

Is Amputation ever Indicated in Coxitis?—Dr. Herman Mynter, of Buffalo, N. Y., stated that sixty five cases of amputation had been reported on account of old neglected cases of hip-joint diseases. Primary amputation, of course, is never indicated, and secondary amputation, which usually has been done on account either of recurrent caries or diffuse suppuration, may be avoided by due care in removing all diseased tissues of bone and synovial membrane. In most cases, probably, the recurrence of the caries is less a recurrence than a continuation in the form of a chronic osteomyelitis in the shaft of the femur, extending all the way down to the lower epiphysis. In two cases of excision recently performed, the author made a counter-opening with the chisel, on the outer side of the femur, just above the lower epiphysis, cleaned out the central cavity of the femur with a long, sharp spoon, and introduced a strip of iodoform gauze through the central canal. This was replaced once a week for five weeks under narcosis, and then omitted, as the bone looked perfectly healthy, and the wounds then healed rapidly. Reference was made to similar operations made by Poore, of New York.

Dr. John Ridlon, of Chicago, complimented the author on his exceptionally good results, and thought that the average excision at the hip-joint gave a much less good result than that obtained by mechanical treatment. In cases of osteomyelitis of the shaft of the femur the operation done in the two cases reported was clearly indicated before doing an amputation. In cases, however, where osteomyelitis of the shaft was not present, he did not think excision was ever demanded except as a life-saving measure, when an amputation might prove a safer operation. As to the scooping out of cheesy or suppurating foci in the head and neck of the bone, he knew of no way by which the cheesy focus could be located with certainty, nor could it be known that there was not more than one focus present; and operation without a clear indication of the condition for which the operation was made is hardly a scientific procedure. The non-operative treatment of hip disease gives so many perfect results when intelligently and faithfully carried out that he was not given to advise operation so long as the local and general symptoms progressed favorably.

Dr. Edmund Andrews, of Chicago, said that there were often several foci of disease, as in one of the specimens presented by Dr. Mynter, and that there was no certainty in any case that an operation would remove all the foci. After suppuration, however, excision would be found to be the shortest and easiest way out of the trouble.

The Cremasteric Reflexes in Varicocele.—Dr. T. A. McGraw, of Detroit, said that every man would have a varicocele if it were not that certain muscles, especially the cremaster, supported the spermatic veins, and by an intermittent contraction forced the blood along. The abdominal muscles aid in this action. Any defective muscular action, whether due to congenital, paralytic, or acquired weakness, especially in early life, results in distention of the veins and ultimate varicocele. Later in life the walls of the veins become thicker and stronger, when a defect in muscular action is much less felt. He had rarely found scrotal hernia associated with distention of the scrotal veins; and he was of the opinion that a subject liable to inguinal hernia was not liable to varicocele. Again, the causes that tend to the development of hæmorrhoids rarely, if ever, appear as causative of varicocele. Deficiency in cremasteric reflexes is almost al-

ways found in cases of varicocele, and it would appear that varicocele is due to the defective action of the cremaster muscle.

Dr. W. B. DeGarmo, of New York, said that hernia had no special bearing on the causation of varicocele; nor has the wearing of ill-fitting trusses making pressure on the veins appeared to be causative. It is very rare in later life, and rarely, if ever, caused by a strain.

Experimental Research on the Implantation of the Ureters into the Rectum.—Dr. R. Harvey Reed, of Mansfield, O., prefaced his paper by saying: "It has been the object of the author of this paper to demonstrate, by experimental research, the possibility of relieving many of the grave disorders of the bladder, in which the urine constitutes a permanent source of irritation, by diverting the course of the urine from the bladder into the rectum; also to avoid the necessity of performing a nephrectomy in laparotomies for neoplasms, in which one or both of the ureters may be involved by implanting the ureter into the rectum." After reporting numerous experiments and their results, and showing specimens of the same, together with photographs, the doctor concluded his paper as follows:

"1. That the unilateral implantation of the ureter into the rectum is a possible and practical surgical procedure.

"2. That the bilateral implantations of the vasa deferentia into the rectum is not followed with any serious or detrimental results, further than rendering the dog sterile.

"3. That the simultaneous implantation of both ureters into the rectum is still a questionable surgical procedure, as shown by the experiments made thus far on the dog, and also by Kuster's double implantation of the ureters in man.

"4. That the presence of urine with the fæces in the rectum does not produce pathological irritation of the latter, but that the rectum will readily accommodate itself to its presence.

"5. That the passing of frequent liquid stools cannot be depended upon as resulting from implantation of the ureters into the rectum, and the presence of urine in that receptacle.

"6. That these experiments have suggested the probability of a portion of the CO_2 of the urine, being absorbed by the rectum, leaving the salts, etc., of the same to be eliminated from the economy with the fæces.

"7. That the ligation of one ureter, and the consequent production of hydronephrosis, is not necessarily followed by inflammation and destruction of the wall of the ureter or the substance of the kidney, and suggests one of two things: either the arrest of the secreting powers of the kidney, or the reversal of the natural physiological process of elimination for those of absorption."

After giving the conclusions, he closed the paper with the following practical observations: "We firmly believe that these experiments have shown, without much doubt, the practical utility of unilateral implantations of the ureter in cases where either one of the ureters is involved, from the result of adhesions, from ovarian or other tumors of the abdominal cavity; and that it is a safer procedure to resort to the implantation of the ureter into the rectum than to perform a nephrectomy, which has been the custom heretofore. We also believe (and intend at some future time to endeavor to demonstrate by a continuation of these experiments) that bilateral implantations can be made successful by the introduction of one ureter at a time, giving the first one time to recover before the second one is implanted. If this can be accomplished, it will enable us, in cases of disease of the bladder, to divert the urine from that organ to the rectum, and thus either relieve the disease, or, if necessary, extirpate the bladder, which at present cannot be done without bringing the ureter out through the perineum with all the horrors of such an unpleasant condition, which is only excelled by an artificial anus.

"If, however, we have only succeeded in preventing the necessity of a nephrectomy by these experiments, where one or the other ureter is involved by some pathological difficulty in the abdominal cavity, we will feel justified in the expenditure of the time and trouble these experiments have necessitated."

Visceral Phlebotomy.—The Secretary read a paper with the above title, by Dr. George Harley, of London, England. Cases were reported in which a trocar had been plunged into the liver for purposes of depletion, and it was advised that every suitably situated internal organ when congested should be thus directly depleted, in place of cupping and leeching.

Advances in Antiseptic Surgery.—Dr. F. J. Thornbury, of Buffalo, N. Y., said that wound infection through the air was very much less common than through contact. He then went on to describe methods of purifying the hands of the operator and of the skin of the patient. Instruments should be boiled in a solution of soda, and apparatus was shown for this purpose. Dressings should be disinfected by steam (apparatus demonstrated) and applied dry and kept dry in so far as it is possible, since dryness is antagonistic to germ development.

Ligature of the Hypogastric Artery.—Dr. Christian Fenger, of Chicago, gave a synopsis of two cases in which he had tied the internal iliac artery: in one case for hemorrhage into an abscess, and in the other for gluteal abscess. He then went on to discuss *in extenso* the literature and the statistics of the subject, with the prognosis, etc.

Operative Procedures on the Base of the Brain.—Dr. Ernest Laplace, of Philadelphia, reported three series of experiments upon dogs. In the first series the anterior fossa was the seat of operation, in the second the middle fossa, and in the third the posterior fossa.

The risk from these operations appears to be from shock, which is controlled by one-twentieth grain doses of strychnia; from hemorrhage, controlled by forceps or packing with iodoform gauze; and lastly, from deficient drainage. The base of the brain may be investigated and clots and spiculæ of bone removed by a flexible instrument made from platinum wire in the shape of a miniature egg-beater. A case, already published, was briefly referred to where he had trephined and removed a clot from the anterior fossa.

Dr. Edmund Andrews, of Chicago, referred to two cases in which he had trephined the base of the skull to remove the semilunar ganglion; and also to the work of Rose and Horsley, of London.

Gun-shot Wounds of the Cerebrum.—Dr. C. E. Ruth, of Muscatine, Ia., reported a case and experiments. He said that the line pursued by the ball through the brain was usually a straight line, but that it did not bear any definite relation to direction from which the shot was fired, and after passing through the brain it seldom rebounds sufficiently to re-enter the brain to any extent. In searching for the track of the ball, he uses a probe with a hemispherical porcelain tip and a slender aluminum shaft. A trephine not less than three-fourths of an inch in diameter should be used. He made the following summary: 1. A ball can be followed in its course through the brain. 2. Having been followed to the point of impact on the opposite side of the skull, a trephine disk should be removed, drainage be established, and ball removed if possible. 3. That the probe is best which gives the greatest resistance to penetration with the least possible lateral friction on its shaft by the collapsed canal. 4. That hemispherical-front porcelain tip and aluminum shaft answer the indications for lead detection (resistance, if of proper size), weight, etc., required in a probe, better than anything else. 5. That one intending to follow balls through the brain should thoroughly familiarize himself with the resistance the normal brain offers to penetration by the probe he expects to use, that he may know when he is applying force within safe limits. 6. That he should frequently grasp and remove

balls and pieces of bone with the forceps of his choice on the cadaver before attempting it upon the living subject.

The Cosmetic Surgery of the Nose.—Dr. John B. Roberts, of Philadelphia, called attention to the ignorance of the non-professional public on this subject, which leads many sufferers to resign themselves to unsightly deformity. A plea was made that physicians discourage the correction of such disfigurements and undertake operative measures for their relief. Slight operations will often effect an astonishing change in the personal appearance of the patient, and even extensive operations are devoid of danger. No marked scarring occurs if such operations are properly done. Oblique incisions, antiseptic union, and the location of the incisions in grooves of the skin make external wounds unnoticeable. In addition, many of the operations are done within the nose, which is reached by the nostrils or through the mouth under the upper lip. No cosmetic surgeon will be successful who does not recollect the frequency of tertiary syphilis of the nose. He may undertake to incise syphilitic gummy tumors and allow destruction of the nose from syphilitic ulceration, if its frequent occurrence is not constantly in mind. All doubtful cases should be tested with large doses of mercury and iodide of potassium. Then followed a description of the various deformities of the nose that are successfully treated, and of the means which the surgeon may employ for their correction. The angular nose, the Jewish nose, the tubulous nose, and all sorts of twisted and crooked noses were said to be amenable to properly directed operation. The correction of the sunken and distorted organs due to syphilis was a prominent subject of consideration, and methods of inserting metallic bridges to substitute the bony bridge were mentioned.

A Few Suggestions on the Diagnosis and Treatment of Lupus.—Dr. William Thomas Corlett, of Cleveland, O., said that lupus was regarded as a local tuberculosis, identical in histological structure with tuberculosis of the internal organs, and due to the bacillus tuberculosis. The differential diagnosis of lupus erythematosus, lupus vulgaris, and lupus verrucosus were then taken up seriatim. The first was often confounded with erythema, rosacea, eczema, psoriasis, and syphilis. Lupus vulgaris was more pronounced, therefore less liable to be mistaken for anything else, but it often resembles the late manifestations of syphilis, and when confined to a small area might be mistaken for epithelioma.

As accessory to treatment in all forms of lupus, he advised a diet rich in hydrocarbons. The internal treatment consisted of cod liver oil, creosote, and iodine. The mode of giving creosote was important; from one to two minims were given in capsule every two hours, and the dose gradually increased to three minims. Mild cases might yield to this alone, but in most cases it was necessary to attack the disease *in situ*. He recommended as local applications, sulphur, ichthyol, and the twenty per cent. oleate of mercury. The most efficient means was scarification, followed by the emplastrum vigo cum mercurio; the scarification to be repeated at intervals of a few days until a cure was complete. In the treatment of lupus vulgaris even more radical means were resorted to. Under chloroform the lupus tubercles were thoroughly scooped out with a Volkmann's spoon, the excavations cleansed with a 1 to 1,000 bichloride solution, and the parts covered with pyrogallic acid. After a few days the acid is replaced by a mercurial plaster until resolution takes place. At times the pain, subsequent inflammation, and constitutional disturbance are too severe, when recourse may be had to milder escharotics, as creosote or carbolic acid. Several operations are usually required before the disease is eradicated.

Forced Respiration, per Face mask and Tracheotomy in Diphtheria.—Dr. George E. Fell, of Buffalo, N. Y., called attention to an interesting case of diphtheria occurring in a family of four young children, who were all taken down with the disease. The first child was given home treatment and recovered, while the second, under similar treatment, without the parents knowing the seriousness of the disease, passed to a rapidly fatal condition. Dr. Fell was called and proceeded to perform the operation of tracheotomy. The patient, a boy of seven years, becoming unconscious from cyanosis, it was unnecessary to give an anæsthetic. Before the operation had proceeded far the dilatation of asphyxia was evidenced by the pupils dilating rapidly. Had it not been for the forced-respiration apparatus which had been provided, the patient would have died immediately after the initial incision, as it was found necessary before the operation of tracheotomy was completed to apply the forced respiration apparatus some five or six times when auto respiration ceased. Following this, forced respiration was kept up per tracheotomy tube for some time before the patient became conscious. The peroxide of hydrogen was used, with gratifying results, freely in the mouth and nasal cavities, and also to the tracheal incision. Many times when dyspnœa became great the liquefaction of the membrane in the bronchial incision was brought about by it so as to relieve the patient. In some instauces when this would not relieve the patient forced respiration through the tracheotomy tube overcame the cyanosis and enabled the patient to breathe for himself for some period of time. The exudation, however, continuing to interfere with the respiratory process, the patient succumbed some sixty hours after the operation was made. The case illustrates the value of forced respiration per face-mask in conditions where membranous exudates interfere with respiration, and in membranous croup and diphtheria; and also the value of peroxide of hydrogen in liquefying the exudates in such conditions.

The Powerful Effects of Sulfonal in Arresting the Cramps of Fractured Limbs and other Reflex Spasms.—Dr. Edmund Andrews, of Chicago, reported a case of very painful cramps in a recently fractured femur, in which fifteen-grain doses gave complete relief. The action of the drug is somewhat slow, and it should be given in from six to eight-grain doses three times a day, or in a single large dose two or three hours before the sleeping time. The anti-spasmodic power is more useful than the sleep-producing power.

Joint Amputations.—Dr. S. L. McCurdy, of Dennison, O., quoted Dr. Allis in a paper before the Pennsylvania State Medical Society: "Don't amputate through the joint; go above or below it." Truax, the instrument-maker, insists upon the same thing.

The paper desired to prove that joint amputations make the best stumps, and that no one is justified in going above a joint when a disarticulation can be made. Human flesh should not be sacrificed on account of lack of ingenuity on the part of the mechanic. He claimed that the normal joint surfaces, covered with abundant flap, with the scar posteriorly at the knee and the Symes at the ankle, make more desirable stumps than those formed by a cut made through the shafts of the bones. Artificial limb manufacturers can and do make legs for joint amputations more durable and comfortable to the patient than at any point above the joint.

He insisted upon the bearings of artificial limbs being upon, 1, ankle, as in a Symes; 2, around the knee; 3, condyles of femur; 4, perinæum by the use of the Thomas ring. Artificial limbs were presented to show that limbs are made for disarticulations.

The writer thought that the future operation will be a Chopart or Hayes, with tenotomy of the tendo Achillis and anchylosis induced in the tarsal and tarso-tibial articulations, thus saving the foot.

Dr. King, of Missouri, in a very large experience in military and railroad surgery had found that amputations through the joints cause the most trouble and return the most frequently for advice. The hollowed-out willow limbs are always the best; they last the longest and require the least repairs; and in a hollowed-out willow limb it is impossible to fit any except a conical

stump satisfactorily. Bulbous stumps, as recommended by Dr. McCurdy, demand leather lacings, which require early and frequent repairs and renewals, and the joints at either side of the thigh portion make a less strong and less comely limb than the ordinary artificial leg joint.

Dr. Craig, of Pennsylvania, said that no patient ever walked gracefully after the tarsus had been removed, and that if this portion had to be removed he preferred to go to the point of election, five inches below the knee.

Fourth Day, Friday, June 10th.

Air in the Veins.—Dr. Edward Martin, of Philadelphia, reported experimental researches. He had found it impossible for air to be sucked into the veins when they were exposed and cut in the neck of the dog, but that they must be held open mechanically to admit its entrance. In dogs the entrance of a few bubbles was of no moment, but the entrance of a considerable quantity killed the animal. In monkeys, however, the entrance of even a small quantity killed within thirty seconds. In the human subject, the accidents which had befallen the writer led him to believe that air is not readily sucked into the veins, but does readily enter the cellular tissue, in which case no dangerous symptoms supervene.

Report of Case of Talipes Equino Varus.—Dr. B. Merrill Ricketts, of Cincinnati, reported a case of congenital deformity. The foot was turned straight backward so that the weight of the body came directly upon the astragalus. This caused the plantar surface of the foot to be thrown upward to such a degree that the under surface of the toes was the only part that touched the ground while standing erect. An incision was made from the lower end of the fibula in the direction of the lower end of the tibia, which exposed the ligaments and tendons of the joint. None of these tissues were divided, but were crowded aside, the more easily to remove the astragalus, which was found greatly deformed, having lost its normal outlines. An attempt was then made to bring the toes forward to their normal position, which was not very successful. The little remaining part of the Achilles tendon being very dense, it was found necessary to divide all the tissues posteriorly before the foot could be brought forward to its normal position. The plantar fascia was found to be so dense that it had to be divided in order that the foot could remain in its normal position. The operation was made under hot filtered water irrigation with dressing of same character.

Drainage was not provided for in this case, but the writer would not fail to use it again, as regret had followed every case where he had failed to make this provision. The result was in every way satisfactory.

Dr. Ridlon, of Chicago, said that the adherence to any one method of treatment in these cases argued a lack of experience. As much or as little must be done as the individual case demands, and there are a certain number of cases where full flexion of the foot cannot be gained without removal of the astragalus. He then referred to a case which he had treated successively by manipulation and Barwell dressing, tin splint, plaster-of-Paris, Thomas's wrench, and an iron brace, tenotomy, Judson's shoe, Phelps's open incision, and plaster dressings, followed by retentive brace, but after each there had been a relapse. When the astragalus had been removed it was found that its tibial articular surface, instead of being convex and looking directly upward, was plane and looked backward and upward at an angle of forty-five degrees with the horizon.

Dr. R. H. Sayre, of New York, had never met with a case where removal of the astragalus had been necessary, nor had he met with any congenital cases in children, or even in adults, that required any bone-cutting operation.

Amputation of Scrotum, and Circumcision.—Dr. B. Merrill Ricketts, of Cincinnati, reported a case :

Mr. F. P——, aged twenty two, white, American, well-developed both mentally and physicially ; height, 5 feet 8 inches ; weight, 130 pounds ; brown eyes, dark brown hair, and of a nervous temperament. Had not syphilitic taint, nor predisposition to tuberculosis. Had moderate habits. He came with the statement that he had consulted nearly all of the leading surgeons and dermatologists of this country without obtaining a diagnosis or any encouragement from surgical interference.

Examination showed that his scrotum was much thickened, as was also the prepuce in its normal size. The parts were covered with papillomatous growth varying in size from pin-heads to that of a large pear, with also an occasional angeioma. The right leg was also covered with these growths. A bandage had been worn on the leg for a long time. Upon removal of this bandage the leg would immediately swell to twice its normal size, with the characteristic glistening appearance. Should these growths be disturbed or the skin punctured, there would follow an exudation of lymph, which would flow continuously till from five to thirty ounces would have escaped. This fluid was the color and consistency of thin cream slightly tinged with blood here and there. It was bitter and crystallized on evaporation.

He gave a history of having, at the age of eighteen months, an abscess in the right groin, from which dated his trouble. Every year he would have from three to four chills, followed by a rapid rise in temperature, ranging from 103° F. to 104.2° F., lasting from twenty-four to forty-eight hours. These attacks were preceded by an enlargement of the limb, loss of appetite, eyes glassy, mind inactive, bowels constipated, and great tenderness in and about the right iliac fossa. The glands in this region were greatly enlarged ; circumcision and scrotomy were advised and readily consented to. The operation of circumcision was first made, with the understanding that should it be followed by any bad symptoms, I would not operate on the scrotum. The ordinary operation for circumcision was done and no bad symptoms appeared, and in two months afterward the patient presented himself for the second operation, which was made without any difficulty. During the following year he had but two or three chills, followed by fever. He gained in flesh, and felt entirely satisfied with the operation.

The operation was made not so much to cure the patient as to relieve him.

Neurectomy of the Popliteal Sciatic Nerve for Painful Neuroma as the Result of Gun-shot Injury.—Dr. B. Merrill Ricketts, of Cincinnati, reported the case :

Mr. M——, aged twenty-seven, a tinner by trade, consulted him on August 14, 1891, with a history of having been shot two years previously through the leg, and that he had suffered excruciatingly ever since. Also that he had consulted several physicians without obtaining any permanent relief, and that by their advice he became a morphine taker. He finally reached the maximum of fifteen grains daily, hypodermically, which was verified by the appearance of the pigmentary spots on the legs where the needle had been inserted.

Examination showed that the ball (.38 calibre) had passed obliquely through the left leg to the inner side, three or four inches above the condyle anterior to the hamstring of the biceps, passing upward at an angle of forty-five degrees, coming out about the middle of the thigh externally. The patient stated that when shot he had the sensation in his toes, and not at the real site of injury. He had his shoe removed, expecting to find the injury in his foot, but was quite surprised to find it higher up in the leg. Within an hour after the injury the pain was equally distributed over the foot and leg below the knee.

At the operation the nerve was found to be enlarged to three times its normal size for a distance of 1½ inch, and that the nerve was divided much higher up in this case than usual. This was fortunate, for had it been normal both branches would have been divided. The internal branch was the injured one. The external was found to be adherent to it for the distance of three inches. A section was made 1¾ inch long including the

entire enlargement. The leg was flexed when the section was made, and was retained in this position by means of straps. The pain gradually subsided. The morphine was withdrawn and small doses of bromide and chloral were used instead. After the twelfth day he was allowed to be up and around on crutches. He left the hospital on the twenty-second day.

I heard from him recently, and find that he is free from all pain and the morphine habit.

Methods of Operating in Hernia.—Dr. H. O. Marcy, of Boston, then illustrated with the stereopticon a large number of dissections for hernia, taken from the writings of both ancient and modern surgeons, and explained the same.

Treatment of Compound Fractures.—Dr. W. H. Myers, of Fort Wayne, Ind., said that the chief indications were to arrest the hemorrhage; to render the wound aseptic; to return the bones to their normal position; and to so dress the wound as to retain position, prevent infection, or if already infected, to render it aseptic. No drainage should be used, and rarely any sutures. Perfect rest must be maintained, absence of tension, and an aseptic condition.

Correspondence.

CONCERNING A NEW FLEXIBLE ELECTRODE.

To the Editor of the Medical Record.

Sir: The elastic electrode described as a novelty by my friend Dr. Lapthorn Smith, in the Record of June 11th, page 676, is so excellent and simple that one cannot blame him for discovering it, in spite of the fact that it was previously described by Buckmaster and F. H. Martin. A similar instrument has been devised and described by myself out of a catheter for use in applications to the enlarged prostate. But the difficulty with all wire-wound, flexible-bougie electrodes is in keeping them aseptic. The rubber or composition around which the wire is wound will not stand the ordinary antiseptics, some even not standing continuous immersion in water, and I am doubtful about the efficacy of the soap and water and glycerine recommended by Dr. Smith. A more serviceable instrument is the spiral platinum intra-uterine electrode frequently described by me, made by Flemming, which is indestructible and capable of absolute disinfection in the spirit flame. The tip may be insulated, either temporarily or permanently, by fusing hard rubber upon it.

Very truly yours,

G. Betton Massey, M.D.

SO-CALLED MALARIAL HÆMOGLOBINURIA.

To the Editor of the Medical Record.

Sir: I have read in the Record of June 4th the discussion, in the American Association of Physicians, on the paper of Dr. Hare on "Malarial Hæmaturia or Hæmoglobinuria." Some of the gentlemen evidently mistook hæmaturia, which is a symptom of many diseases, for the well-marked pathological entity variously denominated "malarial hæmaturia," "hæmoglobinuria," "swamp fever," and "black jaundice."

Malarial hæmoglobinuria (I call it so to prevent confusion with hæmaturia), as it prevails in this section (the Mississippi Yazoo Delta), is always a grave disease, the mortality, as I have observed, falling but little below fifty per cent. It has as distinct a clinical history as croupous pneumonia, and it would be as reasonable to say that the latter disease could be induced by the administration of quinine as the former.

Its pathology has not received the attention that it deserves, but it is certainly not a hæmaturia. The urine contains no normal blood-cells except in cases of the severest type, when actual hemorrhage occurs from renal congestion due to increased functional activity required of these organs in eliminating the necrosed blood-disks from the general circulation. Quinia induces more or less congestion of the kidneys, and it would be especially liable to do so when, as in this disease, the organs are much weakened by the strain placed upon them, the blood being at the same time much impaired by the progress of the corpuscular disintegration. These hemorrhages are rarely ever serious. The chief indication for the administration of quinine is the chills which occur in the course of the disease. These, when closely studied, are found to differ from the chills of malaria in several particulars, viz., the subjective symptoms of cold and discomfort are much more marked in hæmoglobinuria, while the same symptoms objectively are slight. They have not the clock-like periodicity, occurring usually at extremely irregular intervals. These chills (rigors) are not followed by marked increase in pyrexia. There is no evidence, pathological or clinical, that this "necræmia" is malarial at all, there being just the same evidence that yellow fever is malarial, viz., both diseases occur in sections where malaria is prevalent and both are usually ushered in with a chill.

To conclude. In my opinion the sole indication for quinine in this disease is in those exceptional cases where the malarial symptoms are marked. At other times it is contraindicated and positively injurious.

Isaac J. Jones, M.D.

Benoit, Miss.

A FECUND FAMILY.

To the Editor of the Medical Record.

Sir: Now that the report of cases of marvellous fecundity seems to be in order, I beg to contribute from my case-book the following somewhat incomplete, but wonderful record. May, 1886, I attended Mrs. S——, aged twenty, in confinement. She was delivered of twins. She first menstruated when eleven years of age. Was married at thirteen. Had one child ten months later. Had two miscarriages, one of which was of twins and one child at term; numbering seven children in seven years. Not a very unusual history, but that of her mother and aunt's is. Her mother, who died when thirty-five years of age, had eleven children in five labors—twins four times and triplets once. One aunt had twins once, and was the mother of twenty-one children. One cousin, daughter of my patient's mother's sister, had twins once. My patient had five aunts, sisters of her mother, all living and all widows.

Respectfully yours,

Edward A. Ayres, M.D.

The Trade in Deformity.—There are at present in Paris some twenty *culs-de-jatte*, or beggars without legs, whose condition has been brought about not by nature but by art. In Spain there are wretches who buy children (generally selecting the infirm, deformed, or idiotic) from their parents. When these unfortunate little ones are seven or eight years of age their legs are swathed in bandages so tight as to stop the circulation. The limbs thus atrophy, but sometimes, when the child is exceptionally strong, only one leg is a "success," the other being merely anchylosed. In this cruel business perverted religion plays a part, the children being made to believe that they are gaining Paradise. The parents receive 5d. a day for one year, or 10d. if their child is blind or has lost an arm besides. In 1887, M. Waldeck Rousseau, when Minister of the Interior, forbade the *culs-de-jatte* to enter the French territory.

Drinking and Crime.—It is a curious fact, and one from which the Prohibitionists will derive little comfort, that while crime has decreased in England, the expenditure for drink has increased by about eight millions of dollars a year.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending June 25, 1892.

	Cases.	Deaths.
Typhus fever	2	1
Typhoid fever	11	3
Scarlet fever	90	19
Cerebro-spinal meningitis	2	5
Measles	321	25
Diphtheria	65	25
Small-pox	8	2
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0
Mumps	0	0

The Association of Medical Officers of the Militia of Canada.—The first annual meeting of this Association was held at the Canadian Military Institute, Toronto, on June 2d and 3d, Dr. F. W. Strange, I. S. C., President, in the chair. The General Secretary, Surgeon G. Sterling Ryerson, read letters of regret from several invited guests who were unable to attend. He also announced that ninety-one surgeons had joined the Association. The draft of the Constitution and By-laws of the Association was read and confirmed. The President then delivered his annual address, which dealt at length with the defects and requirements of the militia medical service. Among other reforms he advocated the establishment of chairs of military medicine and surgery in the universities. Dr. Warren, Second Dragoons, read a paper of great interest on "Ambulance Work during the Franco-Prussian War of 1870–71." Dr. Warren was with the Anglo American ambulance under Drs. MacCormac and Marion Sims, and saw a great deal of service at Sedan and elsewhere. Dr. Daniel Clark, Inspecting Surgeon United States Army during the late war, read a paper on "Some Brain Wounds, with Results." Dr. Clark's paper went to show how large portions of brain-substance may be shot away, or large foreign bodies may lie within the cranium, without causing serious functional disturbance. Dr. McCrimmon, Twentieth Halton Rifles, read a paper on "The Sanitation of Camps of Instruction." A lengthy discussion on the present state of the militia medical service then took place. It was generally admitted that the present system is defective and that various reforms are urgently needed. In the evening a smoking concert was held at Dr. Ryerson's residence, which was attended by nearly all the officers of the Toronto garrison as well as the members of the Association.

Session of June 3d.—The President took the chair at 10.30 A.M. A paper was read by the Secretary, in the absence of the author, on "Some of the Experiences of a Surgeon during the American War," for Dr. William Canniff. Dr. Canniff entered the service of the United States as Acting Assistant Surgeon, in May, 1863, and was ordered to the Army of the Potomac, and arrived on the field just after the bloody battle of Chancellorsville. He did not, however, remain long at the front, but was offered the superintendentship of one of the Lincoln hospitals in Washington, where he saw military surgery on a large scale. At the conclusion of this paper the Association passed into executive session, and elected the following officers: *Hon. President*, Surgeon-General Bergin; *President*, Surgeon F. W. Strange, I. S. C.; *Vice Presidents*, Surgeon Moore, Forty-first Brockville Rifles, of Ontario; Surgeon Roddick, Prince of Wales's Own Rifles, Montreal, of Quebec; Surgeon-Major Connell, Carlton Light Infantry, of New Brunswick; Surgeon MacGillvray, Ninety-fourth Highlanders, of Nova Scotia; Surgeon Jenkins, Garrison Artillery, Charlottetown, of Prince Edward Island; Surgeon G. T. Orton, Ninetieth Winnipeg Rifles, of Manitoba; Surgeon Duncan, Royal Canadian Artillery, of British Columbia; *Treasurer*, Surgeon Tracy, Forty-ninth Regiment; *General Secretary*, Surgeon G. Sterling Ryerson, Royal Grenadiers, of Toronto. It having been resolved to hold a special general meeting in connection with the Canada Medical Association at Ottawa, in September, the Association adjourned.

The Need of National Legislation for the Protection of Human Life.—Dr. A. N. Bell read an interesting paper on the above subject before the Section on State Medicine of the American Medical Association, in Detroit. It had been a favorite maxim with him that progress in measures for the protection of human life consisted primarily in making evident the consequences of their neglect. Accordingly, he gave statistics to show the greatly reduced mortality following the enforcement of certain sanitary measures, particularly by the Health Board in New York, and by quarantine and disinfection of infected ships. On the whole, a reduction of about ten deaths per thousand of the population annually had been made in New York City since the establishment of the first scientific Board of Health there, in 1866. Quarantine at that port had been getting worse and worse, until in 1856 it had reached its climacteric period. While the States and smaller communities had done much good work in stamping out epidemic diseases, yet the need of national legislation was seen in the fact that there was too much independent power on the part of the State and municipal officials, and above all, because merchants and their shipmasters did too much as they pleased regardless of sanitary knowledge. Dr. Bell favored national legislation, but believed that it should be through a Public Health Board, rather than through the appointment of a Medical Secretary of Health, who necessarily must be a politician.

Eczema Infantile.—At the Detroit meeting of the American Medical Association, Dr. B. M. Ricketts, of Cincinnati, read a paper on this subject, which he believed to be of greater interest to this section than any of the cutaneous diseases met with during the first five years of childhood. It is a very common disease, and one for which the general practitioner is frequently consulted. He confined his remarks chiefly to the symptoms and treatment of this disease, which is one of the most aggravating as well as unsightly of all those occurring in childhood. It is usually distributed over the hands and face, with a few exceptions over the entire body, and occasions a most intense itching and discomfort. The most common cause of the disease (in ninety-five per cent. of all cases in the speaker's experience) is an excessive use of soap and water. The whole trouble lies in the fact that the mother is too anxious to keep the child's face clean; hence the too frequent use of soap and water. The vesicular form is the most common. After the disease has manifested itself, the child is irritable, restless, loses weight, and has a depressed appearance in general. It may have diarrhœa or may be constipated, or these conditions may alternate with each other. The skin is reddened, resembling erysipelas, with a laceration here and there. Crusts may extend over the body; the temperature is usually from one-half to one degree above normal; the hair is matted together from a pustule here and there over the affected area. When the hands are involved, it is usually on the fingers and dorsal surface that the disease is most extensive. The treatment the author favored was the following: Water in any form is prohibited; a solution of olive-oil and carbolic acid, in the proportion of one to fifty, is applied several times during the day; the use of tea and coffee and all stimulants is forbidden; also all kinds of food that should not be given to children of this age; the child is allowed all the out-door exercise he wants. One-twentieth grain of calomel is given every two hours. If the child does not improve rapidly in a few days, Dr. Ricketts applies salicylic ointment, ten grains to the ounce. He said that he

did not know what influence the mercury had, but believed that it had a systemic effect, perhaps in changing the reaction of the secretions. The serum exuded from the patches turns litmus-paper red, and he thought that his success was largely due to the alteration of these secretions from acid to neutral.

Hard on the Doctor Either Way.—Smith: "I read so many cases of people being buried alive. Is there no remedy for it?"

Jones: "The only remedy I know is for the Legislature to pass a law compelling doctors to finish their work properly."—*Texas Siftings.*

"Medical science has made such progress," said the doctor, when speaking of his profession, "that it is almost impossible for anybody to be buried alive now." Then he wondered why everybody laughed.—*Boston Courier.*

The Incomes of Medical Men.—Mr. Goschen, Chancellor of the Exchequer, has recently made some statements regarding the regular and handsome incomes of medical men, to which *The Lancet* takes exception. This income, says the journal in question, has to be divided among all these persons, whose education has been costly, who have disproportionate expenses of living, and whose calling is perilous to life, and hard and exacting to a degree not true of any other calling. It is scarcely fair of Mr. Goschen to tickle the e rs of the public with statements so misleading. The poverty of the profession is abundantly testified. The state exacts much from medical men and it gives little. It exacts high education and high conduct. It affords them little or no protection. It gives them no prizes. It should at least refrain from misrepresentation of the very returns they themselves make. The income of a medical man often barely suffices for his current expenses, and it ceases with his uncertain and perilous life. It is a rare exception for him to leave anything that can be called a fortune. The average income of medical men is probably under £300 a year.

Diphtheria is prevented in a measure from spreading, according to Dr. J. Lewis Smith, by keeping a quart of water containing two tablespoonfuls of the following solution simmering on a stove in the sick room:

℞. Acid carbolic,
Ol. eucalypti ..... āā ʒj.
Spt. terebinth ..... ʒviij.

Anæmia should be treated, according to Dr. Allbutt, with sulphate of iron in daily dose, gradually increased from three to twelve grains. Pills of the dried sulphate are best made fresh without gum. One grain being given three times a day, for a week, then two grains for ten days, then three, and possibly four.

Nurses and Religion.—Professor Virchow, in the Berlin Municipal Council and in the course of a debate on the new Municipal Hospitals, has been speaking in his most vigorous style against what he is pleased to call "the intrusion of religious arrogance" into hospital nursing work. "Everybody knows," he says, "that creeds claim supremacy in the healing of the sick; but we are profoundly interested in keeping away this conflict from the sick-bed, and in permitting the spirit of humanity alone to assert itself there. . . . The community establishes numerous hospitals, and thus has an opportunity of providing for the training of sick nurses without regard to creed." It will have to be admitted, however, that the religious spirit was first to respond to the call for attendance on the sick. If hospitals had had to wait for the latter-day training-school, the sick would have suffered badly.

The Congress of Physical Education recently met in Paris, and after a five days' meeting the following resolution was passed: "That every college, school, or teaching institution whatever, primary or secondary, should have an open space where pupils can carry on games and sports. That shooting should be taught, target and shot being furnished by military authorities. Boxing, wrestling, and fencing should be taught in all *lycées* and colleges. Swimming should be compulsory. A model running ground should be laid out, and a sum should be given for buying velocipedes. That children under thirteen should be forbidden to learn bicycling. That pure woollen clothes should be worn in all schools during the exercises. A register of the physical condition of each pupil should be kept after the examinations of physical exercise; his dexterity, chest girth, and the functions." All members except six voted in favor of the principle of extending the powers of the medical councils.

The Difference Between Drunkenness and Inebriety is stated by M. Trelat thus: "Drunkards are people who drink whenever they find an opportunity for drinking; persons affected with inebriety are diseased, and drink only when the attack seizes them." Drunkenness is a vice; inebriety is a disease.—*Ex.*

Eucalyptus Honey, made by bees feeding upon eucalyptus flowers, is the latest remedy advocated for the treatment of pulmonary phthisis. It is said to possess the same antiseptic properties as the medicinal preparations of eucalyptus.

Religion and Measles.—A correspondent of the *D. Med. Zeitung* is responsible for the following curiosity: In the writer's district Romanists and Protestants are in almost equal numbers, and they live scattered among each other. There are two schools. In the Romish schools are one hundred and forty-seven children in two classes, and at seven minutes' distance is the Protestant school, with one hundred and twelve children in one class. In the Romish school one hundred and thirty-nine children were ill of measles, besides a large number of younger children and infants, while among the Protestants not a single child was ill, not even one. The children with all this are in daily contact, using the same wells and playing with each other. The writer declares himself at a loss to account for this singular freak of nature. An old woman of the place thought the Protestants had another "Herrgott."

Chicago Medical Colleges.—Rush Medical College graduated a class of 142 on March 29th. The Chicago College of Physicians and Surgeons graduated 42 on the same date. The Woman's Medical College has graduated a class of 19.

Seven Babies at a Birth is rather a remarkable showing. Marc Juneau, a French demi-mondaine of Guayaquil, Ecuador, is said to have given birth to seven children, all perfect and healthy.

The Mortality of War.—In the past century it is estimated that over nineteen million persons have been killed in the wars of civilized countries, and twelve hundred millions during the last thirty centuries. Flammarion, the astronomer, makes some curious calculations regarding this mortality rate. The blood of the victims would amount to eighteen million cubic metres. This quantity of blood weighs 18,900,000,000 kilogrammes. It is an unfailing stream, which every hour since history began has unceasingly poured 680 litres of blood to dye the royal purple worn by the occupants of imperial thrones. If the 1,200,000,000 skeletons should rise and climb one upon another the ladder thus formed would reach the moon, coil about that body, and, continuing onward, would mount into infinite space four times as far again, that is, 500,700 leagues in height. The corpses, if thrown into the channel at Calais, would form a bridge between France and England and separate the ocean from the North Sea by a weir. If only the heads of the men slaughtered in war were taken and placed side by side, a band would be formed reaching six times around the world.

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Original Articles.

THE LIMITATIONS FOR VAGINAL HYSTERECTOMY IN MALIGNANT DISEASES OF THE UTERUS.[1]

BY J. E. JANVRIN, M.D.,

GYNECOLOGIST TO THE SKIN AND CANCER HOSPITAL, NEW YORK, ETC.

THE short paper which I have the pleasure of reading before the Fifth District Branch of the New York Medical Association will be of a practical character, and confined simply to those cases of carcinoma or epithelioma of the uterus, including also cases of sarcoma, in which it seems to me that vaginal hysterectomy is demanded.

I shall not attempt to discuss the propriety of this operation as against the high amputation and cauterization as practiced by Dr. Byrne, of Brooklyn, and Dr. Baker, of Boston, in cases in which the cervix is involved, but simply deal with the operation (vaginal hysterectomy) and its limitations under certain conditions and in certain cases. During the past ten years, both in this country and abroad, this operation has gained a strong foothold, and is now accepted, not only as a perfectly justifiable one, but as the operation most desirable in certain cases; and it is my object in this paper to place in a very concise form the class of cases in which it seems to me that the operation ought to be done.

In 1887, Dr. August Martin, of Berlin (from advance sheets of the "Annals of Gynecology"), after going pretty thoroughly over the subject up to that date, concluded his paper as follows: "I recommend the vaginal extirpation of the uterus as the operation, as the means which we ought to apply, in cases of cancerous diseases of the uterus, as long as the disease is limited to the uterus itself."

I believe that the profession in general has accepted this idea, and that most operators, both here and abroad, have, in their selection of cases, confined themselves to this rule; and for that reason have rejected as unfit for extirpation all cases in which there has been ever so slight an invasion of the vagina, and also all cases in which there seemed to be an extension of the malignant disease into the uterine adnexa. Up to three years ago, in determining as to the propriety of this operation, I was always guided by the same rule, and did not knowingly attempt the removal of the uterus in any case in which I had good reason to think that the disease had extended beyond the uterus.

There are many cases, however, in which the cervix or the body, or both, are diseased, in which the uterus is not perfectly movable, not from an extension of the carcinomatous condition to the appendages, but simply as a result of old pelvic peritonitis. In fact my own observations during the past few years have convinced me that the appendages do not become involved in a cancerous infiltration until the general condition of the patient is such that no surgeon, accustomed to operate in this class of cases, would think of performing this operation; *i.e.*, if there is an extension to the appendages, the patient's cachectic condition would be such as to place her beyond any permanent benefit to be derived from the operation. Bearing upon this point of extension of the disease to the surrounding tissues, my observation has taught me that it is much more apt to occur in the *cul de sac* by direct infiltration from the cervix, in cases beginning in the cervix, and then into the pelvic peritoneum, than in the adnexa; and also in some cases it will be found even in the cellular tissue between the bladder and uterus. I have met with three such cases, in two of which the posterior wall of the bladder was involved. In giving an opinion as to the proper limitations for this operation it has struck me that it is best to start with some definite idea as to the usual course pursued by cancerous disease of the cervix and uterus. My own experience, gained principally during the past ten years, has led me to believe that the following table pretty fully covers the usual path pursued:

1. Epithelioma developing upon the cervix.
2. Epithelioma extending up and into the cervical canal.
3. Epithelioma extending up and into the uterine body.
4. Epithelioma extending to the tissues surrounding the cervix.
5. Epithelioma extending downward upon the vaginal mucous membrane.
6. Epithelioma extending downward upon and through the vaginal wall.
7. Epithelioma or carcinoma developing primarily upon the endometrium.
8. Its extension to the body of the uterus.
9. Its extension to the uterine adnexa.

With this table kept clearly in view, I think we can safely and justifiably include in the list of operative cases quite a large percentage over and above those in which the cervix or the cervix and body are involved; and these additional cases will be confined to instances in which the disease has extended simply to the mucous covering of the vagina (Class No. 5), and also those cases, already spoken of, in which there is a certain amount of fixation of the uterus by old pelvic inflammatory deposits, but in which the malignant disease is still confined to the uterus itself.

To come to a proper decision in these border line cases is a matter which, as a rule, can be pretty readily determined, and with perfect justice to the patient.

First. As to cases in which the disease has extended downward *upon* the mucous surface of the vagina. This condition is, I think, generally brought about simply by attrition. The epithelomatous disease of the cervix coming in direct contact with the mucous surface of the upper part of the vagina simply irritates at first, but gradually, as the membrane becomes denuded the poison becomes absorbed by it, and a focus for extension is added to the case. Fortunately, for quite a time, in most cases, the conservative resources of nature are called into play, and a deposit of healthy, newly formed connective-tissue proliferation takes place in the vaginal wall, thus separating it from the glandular and cellular structures beyond. In such cases an examination will show an extension of the disease simply to the mucous surfaces, the vaginal wall slightly, if at all, thickened, and no cancerous infiltration whatever under the wall, the vagina in all respects, excepting as to its mucous membrane, being practically normal. This condition does not in any way counterindicate the operation. It simply complicates it by necessitating the removal of that portion of the wall upon which the disease has started, together with a half inch or more of the healthy tissue below. This is best done by making the circular incision through the vaginal wall at the proper point at the beginning of the operation, dis-

[1] Read at the Eighth Annual Meeting of the Fifth District Branch of the New York State Medical Association, held in Brooklyn, May 24, 1892.

secting upward and ligating any vessels which may cause sufficient bleeding as to require it, and then as you reach the outer border of the cervix go on in the usual manner and extirpate the uterus. I have had two such cases within the past three years—one done about three years since, and the other three months since. There has been no return of the disease in the first case. In the second, of course, the time elapsing since the operation being but three months, it is impossible to foretell the result. All that I can say is this, that the patient is the picture of health at the present time, and I expect a perfect cure in that case also. Several other operators have had a similar experience during the past two years. Drs. Krug and Polk have reported each two cases, I believe.

As to the other class of cases, viz, those in which the disease is located in the body of the uterus, or in the body and cervix, and in which there are also evidences of thickening in the broad ligaments. In such cases there exists a condition in which grave doubts as to the propriety of extirpation may arise. As stated before, if this thickening is due to an extension of the carcinomatous infiltration into the ligaments, tubes, ovaries, and peritoneum, the general condition of the patient is almost always such that the operation would not be thought of, but if the thickening is due to old pelvic inflammatory deposits and there is a history of such inflammation, the condition of the patient will not have been affected to any such extent as to preclude the operation. This condition, however, renders the technique of the operation decidedly more difficult, often absolutely preventing us from drawing the neck of the uterus down to the vulva, and consequently compelling us to perform the most difficult steps entirely by the sense of touch. Where there is a well-grounded doubt as to the character of these deposits in and around the broad ligaments, I have, on several occasions, decided the matter to my own satisfaction to a great extent by the sense of touch; the thickening from simple inflammatory causes always having somewhat of an elastic sensation, while that from cancerous infiltration is always excessively hard and firm. This point in this class of cases, in connection with the patient's general condition, will almost always serve to aid us in making a proper selection for the operation of extirpation.

In many cases of epithelioma of the cervix the tissue is already breaking down and the destructive process has begun to invade the mucous covering of the vagina before the patient seeks relief. In such cases a thorough curetting away of as much of the diseased tissue as is possible with the sharp curette, the application of some cleansing styptic and the subsequent dressing every second day with a ten per cent. dry iodoform gauze, continued for ten days, will be of great benefit in preparing the case for the final operation, extirpation. When in any case of suspected carcinomatous disease of the endometrium or of the body in which the local and rational symptoms are not sufficiently well marked to decide the case absolutely, we should always employ the sharp curette and thoroughly scrape away sufficient tissue to examine microscopically. This will enable us to decide the question of malignancy beyond a doubt in nearly every case.

A few words as to the size of the uterus as applied to the limitations of this operation. I have had occasion to operate in several cases in unmarried women in whom the uterine cavity measured four and a half inches in depth, one a case of sarcoma, another a carcinoma, complicated by a fibroma, as large as a pullet's egg, and situated in the left horn of the uterus. In this latter case it became necessary to make deep incisions into the labia on either side in order to get room enough to extract the uterus, and even then I was oblized to use my "ligature carrier" (devised for cases in which the vagina is small and also for cases in which the uterus from any cause cannot be sufficiently well drawn down to allow the application of the ligatures by the ordinary curved needle), and with this "carrier" there was very little difficulty in throwing the ligatures around the broad ligaments. I believe it is rarely necessary to use clamps; and their use certainly is not as desirable or as surgical as the ligature, and they are, generally, uncomfortably borne by the patient.

To summarize the points presented in this paper I would say: That I most heartily recommend vaginal hysterectomy, not only in cases of cancerous disease of the uterus, as long as the disease is limited to the uterus itself, as recommended by Martin and all other operators, but also in all cases in which the vaginal mucous membrane has been attacked, but in which the subjacent tissues are not involved; and also in all cases in which the thickening in the broad ligaments, tubes, ovaries or peritoneum is presumed, after a most careful examination of the case, to be purely of an inflammatory or plastic character.

VAGINAL HYSTERECTOMY FOR THE RELIEF OF MALIGNANT DISEASE.

By ALEX. J. C. SKENE, M.D.,

BROOKLYN, N. Y.

THE most careful attention that I have been able to give to the subject of the relative merits of vaginal hysterectomy in the management of malignant disease, has led me to the conclusion that it is the most reliable surgical treatment in certain conditions and under certain circumstances. I am firmly convinced that within certain limits it is the best operation at our command, and that when confined within those limits it is undoubtedly the best. I am equally well satisfied that it should only be classed among the other recognized methods of treatment, and should *not* take the place entirely of all others. The operation is indicated, in my opinion, when the disease occurs near to or after the menopause; when it begins in the endometrium, more especially in the body of the uterus; when a positive diagnosis has been made; when the disease has not involved the vagina or the Fallopian tubes to any marked extent, and before necrosis has begun in any part of the abnormal tissue.

The reason for setting these limitations to vaginal hysterectomy may be briefly given as follows: If vaginal hysterectomy is performed before the menopause and the ovaries are not removed, the patient will suffer great constitutional disturbance from an enforced amenorrhœa; on the other hand, if the ovaries are removed before forty-five or thereabout, the menopause which is produced thereby so modifies the general health of the patient as to favor a recurrence of the malignant disease. For these reasons, then, the age of the patient should be taken into account in electing this operation.

In regard to the starting-point of the malignant disease, this has a very important bearing in regard to the choice of the operation. In the rare cases in which the disease begins in the cavity of the body, vaginal hysterectomy, in my opinion, is the only operation that promises the slightest benefit, and should invariably be employed if the age of the patient is favorable. To a certain extent the same holds true when the disease begins in the cervical canal, and there progresses without involving the cervical portion of the vaginal mucous membrane. It is in those cases where the diagnosis is the most difficult to make, and almost always, I fancy, necessitates a curetting in order to determine the nature of the abnormal tissue.

I am satisfied that mistaken diagnoses have interfered with our obtaining reliable facts regarding the real value of hysterectomy. This I presume to infer from the fact that there are a number of cases recorded where hysterectomy has been performed for supposed malignant disease, but the most careful examination of the specimen failed to give any evidence that such was the case. A similar error, though far less grave, I am sure has been made in cases of uterine adenoma, which the microscopists have told me is not so easy to differentiate from ma-

lignant disease; and they further justify the operation by the assertion that adenoma of the uterus, as a rule, is followed by malignant disease in the great majority of cases. In view of these facts regarding those cases where the disease begins in the cavity of the uterus, I insist upon it that the testimony of the pathologists, and the clinical history obtained after a thorough curetting, shall agree before deciding in favor of hysterectomy. Another limiting condition is the limitation of the disease, that is to say, it should not extend beyond the uterus, either in the tissues above the vagina, or into the vaginal wall itself, to an extent which should make it even difficult to separate the uterus and all diseased parts from the surrounding tissues and organs. If the disease has advanced so as to make it difficult or impossible to separate the uterus from the bladder and rectum and ureters, the danger of the operation is, of course, greatly increased, and the danger also of leaving tissue which is affected is also very great.

Finally, I think that, while vaginal hysterectomy is not contra indicated, it is much more likely to be followed by unfavorable results, when necrosis has begun in the diseased tissue. In such cases it is almost, if not entirely, impossible to remove the uterus in the usual way without getting septic infection which may prove fatal.

These are in brief my reasons for insisting upon the conditions and circumstances referred to, before resorting to vaginal hysterectomy. It will be seen from this that, while I strongly advocate vaginal hysterectomy in suitable cases, there remains a large number, perhaps the majority, of malignant diseases of the uterus, in which I prefer other methods of operating, such as those adopted by Sims, Byrnes, and Baker. I do so because in many of those conditions that have been hinted at, I am confident that high amputation, curetting, and cautery are safer, indeed, almost entirely safe, and I believe they are as sure to give as complete and prolonged relief as vaginal hysterectomy.

I might sum up the whole argument in a sentence by saying that in certain cases of cancer of the uterus vaginal hysterectomy is by far the best treatment, and gives more perfect relief and longer life than any other method. In other conditions it is a more dangerous operation by far, and does not prolong life in a greater degree.

It seems to me, entertaining as I do the opinion that vaginal hysterectomy is one of the ways, not the only way, of managing such cases, that it is hardly judicious to compare this operation with others, because where the one is admissible and advisable, the others are not.

These remarks have been made after taking it for granted that vaginal hysterectomy in the treatment of malignant disease is a necessary and advisable operation, and its merits have been discussed in a relative way in regard to other surgical procedures for the relief of malignant disease. Some very important questions relating to this subject yet remain to be discussed, but I am not sure that we have sufficient data to come to any definite conclusions. I refer to the question as to how far surgical means, say hysterectomy, for example, is capable of prolonging life and saving human suffering. We know that the mortality has been very high, and although it has been greatly reduced and rendered a much safer operation, especially in properly selected cases, still the mortality is high. And again, granting that recurrence is less liable to occur as soon as it does after other forms of treatment, a point that is not by any means well proven, the question still remains, has human life been prolonged by this treatment? and if so, to what extent? My own opinion is that the saving of human life has not been so marked as to make one a very great enthusiast in regard to this operation, but I believe that it is considerable; and more than that, the relief from human suffering has been such as to prejudice me in favor of the operation. I base this statement upon what I believe to be a fact, that those who do not recover only lose but a portion of their days, and such days as have not much comfort or usefulness in them; and again, those in whom the disease recurs soon after a complete recovery, the disease usually terminates fatally, with less of that time of extreme suffering. However, we require far more facts, obtained from accurate observers, before we can really estimate the true value of the operation. Perhaps future experience will greatly extend the limits of the operation, but for aught we know yet, it may further circumscribe it.

There is another point which I now have under observation, and have had for some time, and that is the general condition of patients suffering from malignant disease of the uterus. It is becoming evident to me that there is a vast difference in the general condition of patients, some being quite in favor of the operation, others almost forbidding it, even when the local conditions indicate it. I do not mean by this the difference between those in whom the disease seems to be entirely local, where in others the general organization seems to be suffering, but I believe that there are certain organizations, especially those of a chlorotic order, where the circulatory apparatus is imperfect, and where they are prone to degenerations of all kinds—renal, hepatic, and so on—the cases that are always most liable to develop malignant disease, that it is almost useless to employ any surgical treatment; for if they apparently recover, and the operation is as complete as it can be, the disease almost immediately recurs. I, of course, include in this class those in whom the pulmonary artery is undersized, a condition which has been found (post mortem) in all cases observed who died rather early in life from malignant disease in any part of the body. Perhaps those might be said to have the cancerous diathesis in variously marked degrees. Now, it is quite possible that as we acquire more skill in detecting this diathetic condition, we may be able to extend, or contract, the limits of surgical interference in malignant disease of the uterus.

SYPHILITIC HEMIPARAPLEGIA.[1]

By S. T. ARMSTRONG, M.D., PH.D.,

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More than two score years have passed since Professor Brown Séquard published his discovery that there was a decussation of the conductors of sensitive impressions in the spinal cord, refuting the previously entertained Galenical idea that the contrary was the case.

So it has since been accepted by neurologists that a focal lesion involving only one side of the lower thoracic or the lumbar segment of the spinal cord would cause hemiparaplegia. By this is meant a condition producing on the side of the lesion paralysis of motion, with or without cutaneous hyperæsthesia, lessening of reflex action, impairment of the muscular sense, and elevation of temperature in the lower extremity, while on the opposite side there is a loss of the cutaneous sensation only. As a tribute to the discoverer of the decussation of the sensory fibres in the cord, Dr. Radcliffe proposed that cases of unilateral lesion of the spinal cord be called Brown-Séquard's disease. To this proposition that physiologist dissented, on the ground that a disease is constituted not only by a group of distinct symptoms, but by the existence of the very same kinds of organic alterations in all cases of it; and as a tumor, a hemorrhage, a knife-wound, etc., may produce the organic alteration, this form of paraplegia cannot constitute a special disease. Notwithstanding this protest, Brown-Séquard's paralysis is a more frequent appellation than hemiparaplegia for those cases of unilateral disease of the spinal cord in which there is paralysis of motion of one lower extremity with paralysis of sensation of the other

While the protean character of syphilitic lesions is well known, and the possibility is recognized of almost any nervous disease being caused by syphilis, all authorities

[1] Read before the Fifth District Branch of the New York State Medical Association, May 24, 1892.

agree that lesions of the cord are rarer than those of the brain; and an extensive personal experience with the disease as seen in general hospitals, as well as a reference to the published literature, both of syphilis and nervous diseases, evidences the great rarity of this variety of syphilis of the spinal cord.

Undoubtedly all agree with Leyden, Moxon, and others that the foundation of a diagnosis of syphilis of the spinal cord is based principally upon the antecedent existence of constitutional syphilis, and the absence or insufficiency of all other causes that may produce the existing symptoms. In the following case there is a clear specific history, and the improvement under specific treatment justified the diagnosis of the cause of the lesion.

A. L——, aged forty-one, a native of Norway, a seaman by occupation, first came under observation at the U. S. Marine Hospital, New York, on June 22, 1888. He was suffering with pain in his hips, knees, and feet that had existed for two weeks. Two and a half years before admission he had had a chancre that was followed by a papular eruption, for which he had been insufficiently treated. He was placed on suitable treatment, and on July 11th I operated upon him for a stricture of large calibre. He was discharged from the hospital on July 24th, free from pain, excepting slight tenderness in the heels. He was readmitted to the hospital on January 29, 1889 suffering with pains in his shoulders, arms, back, and chest. He stated that he had suffered more or less from rheumatic pains since his discharge from the hospital, but they had been particularly severe during the week preceding his admission. He had an indurated ulcer on the side of the tongue that had been present for some time. He had had incontinence of urine for two weeks. He was at once placed upon iodide of potash treatment.

On February 4th there was a sudden paralysis of the right lower extremity; the left could be moved easily. The patellar tendon reflex was absent on the right side; and on the left but a moderate reflex was obtained. The cremasteric reflex on the right side was diminished when compared with that on the left. The skin of the soles of the feet was too thick to obtain the plantar reflex. The dynamometer showed a compression force of 35 kilogrammes in the right hand; 30.75 kilogrammes in the left. The æsthesiometer showed normal tactile sensation on the anterior surface of the body until the thighs were reached; on the left thigh sensation was diminished from the inguinal region until in its lower portion, and in the leg there was a complete loss of sensibility.

On the anterior surface of the right thigh and leg there was a very slight diminution of sensibility. Posteriorly the same results were obtained, excepting that anæsthesia commenced at the left nates. There was diminution of the thermal sense in the left extremity. There were incontinence of urine and fæces; examination of the urethra showed that the stricture had not recurred. Occasionally he had a sensation of constriction about the abdomen, below the navel. On sitting up in bed he had pain in the lumbar region, but it was not definitely localized. No temperature variation was noted in the right lower extremity.

It was believed that the persistent pain in the lower extremities for the preceding seven months were indicative of the pathological process that was going on about the cord, and that had culminated in this paralysis. The symptoms indicated a lesion of the cord in the region of the last thoracic or first lumbar vertebræ. Daily increasing doses of iodide of potash were given, but this was later limited to sixty grains a day, with the addition of syrup of the iodide of iron, as he was quite anæmic.

In two weeks the patellar reflex on the right side gave a tardy response, and it seemed to react better each day. The bladder held urine for a longer time, and there was no incontinence of fæces. The patient was given crutches so that he could have the benefit of exercise, and he was able to walk with them for a short time.

February 24th.—He walked alone.

February 27th.—A note was made that the gait in walking was good; but the strength improved so slowly that an experiment was made of suspending the patient for a few minutes in Sayre's apparatus, so as to induce or hasten the absorptive process that was believed to be going on in the affected segment of the cord by stretching as for locomotor ataxy. He thought his extremities were stronger after the suspension, so he was placed in the apparatus daily.

On March 4th an increased frequency of micturition was noted; on the 6th, there was stillicidium; on the 7th, retention of urine; and on the 8th, a chill that could not be attributed to any other cause than some evil effect of the suspension, that was accordingly discontinued. Five days later the vesical symptoms had disappeared.

March 22d.—The dynamometer showed equal compression force in the lower as well as in the upper extremities. The patellar and cremasteric reflexes were normal. The muscles were firm, and the measurements of each limb gave similar circumferences. With the æsthesiometer no difference could be detected in the two extremities. Thermal sensations were normal.

March 24th.—The patient was discharged for outpatient treatment, as he was able to be on his feet all day, and his general condition was very good. He went to sea, was away several months on a trip, and was unable to continue the specific medication. He returned to the hospital with well-marked symptoms of posterior spinal sclerosis; but, as I was transferred from that hospital, I could not follow the course of the case.

To resume, we had a case of a middle-aged man, subjected by his vocation to exposure, who had syphilis of three years' duration, who suddenly presented a hemiparaplegia with the following symptoms:

	Right leg.	Left leg.
Local temperature	Normal.	Normal.
Voluntary movement	Absent.	Present.
Reflex movement	Absent.	Knee-jerk diminished.
Touch sense	Present.	Absent.
Pain sense	Present.	Absent.
Temperature sense	Present.	Absent.
Muscular sense	.....	Present.

Under specific treatment the condition disappeared, but during a suspension of that treatment, symptoms of involvement of the posterior columns of the cord about the same level developed.

The absence of local symptoms over the vertebræ, and the quick recovery following the administration of the iodides, eliminated any disease of the bone as the causative factor. So with any tumor, it would hardly have been absorbed in twenty days. There was no evidence of arterial disease, and yet the sudden onset would suggest hemorrhage or thrombosis, while the recurrence of a spinal trouble suggested syphilitic meningitis with infiltration, as did the earlier persistence of rheumatic pains in the lower limbs.

G. Passovant, in a study of transient paralysis in syphilitics,[1] concluded it was caused by a syphilitic thickening of the arterial coats; and the consequent narrowing of the channel of the vessel impeded the blood-flow, so that in case of diminution in the blood-pressure there was obstruction at the diseased locality, and consequent anæmia. When the heart regained its force, the vessel again dilated, and a restored circulation renewed the activity of the nerve-cells.

Heubner has shown that the specific inflammation may be limited to single spots on the arterial walls, with thickening of the intima, and thrombosis accompanying the endarteritis. Such a condition would explain the sudden onset of the case, and the rapid improvement.

It would in nowise interfere with the possibility of a later specific inflammation of the meninges with infiltra-

[1] Virchow's Archiv, Bd. xxv., 1862, p. 151.

tion extending into the posterior columns of the cord, producing the symptoms of locomotor ataxy.

Folet reported a case of syphilitic hemiparaplegia [1] occurring in a male aged thirty-seven, in whom the paralytic symptoms developed in three days, and who recovered in a year.

Bozire reported a case of the disease [2] in a male aged thirty, in whom the symptoms developed suddenly, and who recovered in a year or more.

Eisenlohr reported [3] a case in a patient aged thirty, who had syphilis eleven years previous to an attack of rectal and vesical paralysis, with paralysis of the right leg, paresis of the left, and greater reduction of cutaneous sensibility in the latter than the former. Improvement followed treatment, but later there was paresis of both legs without ataxia. At the necropsy the dura spinalis was found attached to the posterior portion of the cord by meningeal inflammation from the height of the tenth dorsal nerve to the cauda equina.

The impression seems to exist, though it has been impossible to discover on what evidence, that syphilitic hemiparaplegia is a disease susceptible to treatment. My own case certainly temporarily recovered, though subsequently relapsing, as did Eisenlohr's. The two other cases herein referred to recovered, at least for some time. But the probability of relapse in such cases is very great, especially as either the blood-vessels or the meninges may be affected in other localities and await a suitable time to indicate the existence of the pathological process that is going on.

The necessity of continued specific treatment is apparent; and, as in all cases of syphilis affecting the nervous system, every precaution in therapeutics and hygiene should be observed. In a case in which the history of syphilitic infection is obscure, and yet no other causative factor is discovered, it is much better to assume the specific character of the case than to ignore such a possibility; the latter involves permanent disability if not death, while the former simply involves the administration of the iodides, with occasional inunctions and hot baths.

THE LOST ART OF VENESECTION.

By C. C. P. CLARK, M.D.,

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A FAVORITE lecture of the late Mr. Wendell Phillips was on "The Lost Arts," but he unearthed none that had fallen into more utter oblivion and desuetude than has now, for many years, the practice of venesection. A few years ago the late lamented Dr. Fordyce Barker told how, having occasion to bleed a patient, and, to his surprise, finding no lancet in his own pocket, he sent to all the doctors and drug-stores in the neighborhood without finding one. A like illustrative incident happened to myself a few years ago. Called to a neighboring village in consultation with one of the most eminent among its dozen medical gentlemen, I suggested that our patient should be bled. Our doctor consented, and I sat down to see it done. But after wiggling about a little in an embarrassed way, he called me to one side, and blushingly confessed that, although he had graduated at a New York Medical College, duly walked the hospitals, and been actively engaged in practice for above ten years, yet had he not only never bled a patient, but he had never seen one bled. And not two weeks ago a medical practitioner of like opportunities made to me the same admission. Indeed I don't happen to know of a medical practitioner besides myself who habitually carries a lancet, though doubtless some such there are; and the only kind of case in which I have heard, these many years, of one's being used is that of puerperal convulsions—in which, by the way, its employment is quite superfluous if a couple of grains of morphine are at hand for subcutaneous injection.

Great and numerous as have been the changes in the therapeutic art since this century began, no other among them has been so important as this disuse of bloodletting; for though regular Sangrados were never in any intelligent or civilized community the prevailing type in our profession, as vulgar tradition would have us believe, yet it seems to be quite certain that down to the time when the older among us were born, the lancet was the prime resort and chief reliance in serious attacks of sickness, in grave injuries, and in many cases of mere disordered health. Neither asthenia nor anæmia forbade it to be tried—not but what in some epidemics it was soon seen to be injurious, and given up accordingly.

Moreover, nearly all of the other important changes in therapeutics with which the present century has abounded have consisted in the introduction of novelties, the old instruments of cure—mercury, opium, cinchona, and so on—still maintaining their place. The lancet only has been substantially repudiated, and thus the first became the last.

It is hard to believe that this has been altogether wisely done. The assumption involves that our ancestors were all fools. But no one can read the works of such men as—to confine ourselves to writers in our own language—Sydenham, Cullen, the Hunters, Churchill, Denman, Dewees, etc, without admitting that there were doctors then as earnest, observing, and keen-minded as any of us. When we consider that from the scantiness of medical literature they had little, comparatively, but their own experience to depend on for guidance, it seems to me quite incredible that such minds should, in so practical a matter as the art of therapeutics, indulge, generation after generation, a delusion so monstrous and so injurious as that which is now ascribed to them in regard to venesection. There was great unanimity among them. Cullen's antagonist and brother Scot, John Brown, was the first and only man now remembered who opposed that "antiphlogistic" system of treating disease of which the lancet was the master-tool, and though he did divide the professors of medicine into schools, the adherents of his own school remained in the minority, while the rank and file of the profession, and the people themselves, were nigh all on the other side, and this not alone for attacks of sickness. That

> "A bleeding in the spring
> Is physic for a king,"

was a maxim of almost universal acceptance, and I well remember when it was as common for men and women to come to my father's house, in many instances repeatedly, and ask "to be let blood," as it is now to want to have their lungs "sounded." No doubt the lancet was often heedlessly, and sometimes injuriously, resorted to; but its nigh universal favor among a race of people so practical-minded as our own would seem to be conclusive evidence that its use was often highly advantageous. It has been said in explanation of this altered practice that the "type" of diseases has changed in recent times from what it used to be. But this is a mere assumption, wholly without actual or possible evidence. Granting, as Sydenham contended, that there may be such a thing as a debilitating "epidemic constitution of the air," we have no proof of its increased prevalence in these days. And, as to our own physical systems, it is pretty certain that we are more robust than our ancestors could boast of being.

The principal causes of this remarkable revolution in our treatment of disease are within the personal recollection of some of us. The first serious wound that venesection, in common with nigh all the other chief features of the old practice, received, it got from the vogue of the Thomsonian system. This, though somewhat of a copy, was not an imitation of the Brunonian views, but a genuine autochthon of our own country, so prolific of new

[1] Bull. de Ther., 1867, p. 90. [2] Lancet, 1865, vol. ii., p. 116.
[3] Neurolog. Centralb., 1884, No. 4.

inventions. It repudiated and condemned not only bleeding, but all mineral medicines, purgation, and whatever else might be supposed to reduce the human system. Of the humblest origin, it pervaded the whole land, waging with the old doctrines no unworthy contest, although its greatest prevalence was among the more ignorant populations of the West and South. Its respectable progeny is the eclectic school, with head-quarters at Cincinnati. But the most damaging hurt that our inherited vigorous methods of practice got was delivered by homœopathy. For only from the success of this did we learn—or most of us, at least—that a great majority of sick people will get well without any kind of medicine or other treatment. And naturally the lancet was the first thing to be given up, as by far the most unpleasant of all, both to the bleeder and the bled. Add that there is a natural prejudice against the loss of the vital fluid as weakening, and you have all the arguments that were ever used, or could be, against venesection. Evidence against it—new evidence—there was none. With the disuse our disinclination to its employ has steadily augmented till the estrangement has become settled and almost entire.

Such in brief is the whole story of the decline of venesection to its present low estate from the exalted rank that it had maintained, almost unquestioned, from the time of Dr. Hippocrates to the arrival upon the therapeutic stage of Dr. Thomson. Has it been a good thing? I think not. The question is little arguable from its nature, for it is one of facts, and facts, moreover, that no ingenuity of statistics can ever comprehend or properly array. They are too variable and complex. And yet there are two or three that are worth referring to.

In the first place, the dangerousness and injuriousness of the abstraction of blood are in general greatly overestimated. The late war fully established, in this regard, what we less often observe in civil practice, that a man in health is not only not seriously harmed, but is often benefited, by the loss of blood, even though it be considerable. Thirty years ago it was quite a common thing for men and women in apparent health to ask to be bled. A pint was the regular quantity to be taken. And I never heard any of them complain of damage from it. They said it did them good. It has the effect of fasting. It seems to spur all the functions of organic life to new activity, and from its transient depression vitality mounts quick to a higher plane. As to its effects on sick people, taking the cases by and large, he who reads the "Four Georges," everyone of whom was bled in different complaints more times than he had fingers and toes, will come to the conclusion that it is not easy to kill a man with the lancet, with however little discrimination it may be used. I have myself no doubt that innocent (!) purgation in old times could number its victims by hundreds where venesection, recklessly as it was employed, did by units only. Even in the exhaustion of typhoid fever spontaneous hemorrhage, unless to a fatal amount, has generally seemed to me to have a favorable influence on the case, and the only situations where experience positively warns us against the abstraction of blood is in the well-advanced stages of pneumonia and the exanthems, when vital depression is grave and rapid, and in certain asthenic epidemics. In short, it may be safely claimed that venesection is seldom a dangerous measure.

Meantime, that the diminution of the quantity of blood in an inflamed or congested part has on it in general a highly beneficial influence, is abundantly demonstrated by the effect of epistaxis, of ever so small amount, in a headache, as well as by the great good we constantly see from leeching and cupping—measures fortunately not yet discarded in the profession, though far less often resorted to than they should be; for how few of us have yet learned that a leech applied in season will abort a common whitlow?

Now, if drawing blood from the temporal region is highly useful in inflammatory affections of the eye, as it admittedly is far beyond all other measures put together, why should it not also be of value with an inflamed lung, a congested brain, or an overloaded right ventricle? Reasonable, however, as the affirmative answer to this question may look, it can only be well settled by personal experience. My own has made me attach so great importance to the use of the lancet, that I have got to some extent the name of "the doctor that bleeds." I employ—or perhaps should better say *have* employed—it in nearly all cases of pneumonia, and other extensive inflammations, in violent fevers of whatever sort (Cullen's "synochus"), in congestions of the brain, and in many cardiac affections, and I never in a single instance have had occasion to regret its use.

To show the tolerance of the human system toward this remedy, as well as the benefits of it, I trust it will not be tiresome to your readers if I here set down very briefly two or three instances of my resort to it, and of its effects. It is now more years than I should like to say (lest I be reckoned to be already in my dotage) since I was called to attend upon a lady, in the period of her menopause. She had had a bad cold for some days, which had now become a general inflammation of both lungs, bronchial as well as cellular. A small, quick pulse, severe dyspnœa, scanty expectoration of slightly sanguineous sputa, and some dulness over nearly the whole of the back, with scattered mucous râles, were the chief symptoms. I bled her moderately twice in the course of the first thirty-six hours of my attendance, with some relief. But sent for on the second night, I found her condition so aggravated that I called in a neighboring practitioner of more experience and reputation than I could boast. After examining our patient the venerable gentleman retired to a corner of the room—I shall never forget the scene—and held communion with himself for many minutes. Then he said: "This woman will certainly die if she is not bled, and I guess she will any way. But don't take too much. I will stay by you, and we will see what she can bear."

To make the story short, I bled her four times more within the next two days, to as much as three-quarters of a pint each time, and she got well, having passed through the well-marked several stages of extensive double pneumonia.

In January, 1891, a lady, in her fifty-first year, of whose health I was in charge, and who for some years had suffered under an affection of the heart which I considered to be dilatation of the right ventricle, with repeated dropsical symptoms, was violently attacked with pneumonia. Within thirty hours I bled her three times, to the amount of above three pints in the whole, and with the effect of jugulating the disease—for thirty-six hours later every unpleasant symptom had disappeared—which under any other treatment would certainly have killed her. This was Bouilland's bleeding, *coup sur coup*.

Many years ago I was called to visit a lad still a little under five years of age. He had gone to bed the night before in perfect health, called his mother before she had risen in the morning to give him some bread and butter, but did not make his appearance at the breakfast-table. On going to his room she found him comatose and convulsed. In this state he remained until I saw him, about 2 P.M. the same day. Meantime he had been visited and prescribed for by two other physicians. I found him with a pale and very cool surface, a small, weak, and slowish pulse, deep coma, and continuous clonic convulsion. I told his father that his only chance was in being bled, and when I had with no small difficulty got his consent to a measure that looked so tragical to him, I took from the little fellow's arm sixteen and one-half ounces of blood by weight at a single session. His pulse came up as the blood flowed out in increasing volume, the convulsion abated, his coma seemed to change into a natural slumber. I bound up his arm, and the next morning he was well and at play. Only a few weeks after, I had

identically such a case in a lad seven or eight years older, on whom I used the same treatment, and with the same result. Cerebro-spinal meningitis was prevailing in the neighborhood at that time, a complaint which copious bleeding early, and opium afterward, seem to be the only treatment for.

But if the profession has indeed erred in this so general neglect of the lancet, can we ever return to the right path? Never, certainly, unless hospital doctors and professors of medicine lead the way. Nobody ever wants to be bled, or submits to it, without the strong insistence of his medical attendant in these times. There is a universal repugnance to the measure, both on account of the pain that attends it and our instinctive horror of blood, together with a strong prejudice against it growing out of its disuse. Neither does the young doctor like to undertake it for the first time. It requires more skill to do the little operation well than it does to cut off a leg. And then there is that artery, lying right under where you have to cut. Finally, how is the tyro in medical practice ever to find out when he ought to bleed, unless or until he has had some instruction on the subject from his teachers? Bleeding is the last kind of experiment that he will be disposed to try on his own hook.

But let me tell him this for his encouragement: I have bled many a score of patients, and yet, so far as I can now remember, I never lost a single one after bleeding him, and certainly I have never regretted the operation; while, on the other hand, I feel more sure of having saved some lives by this than by any other means I have ever employed.

February 25, 1892.

THE TREATMENT OF CERTAIN FAMILIAR DISEASES OF THE SKIN.[1]

By R. C. MATHENY, M.D.,

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THERE is probably no other class of diseases from the treatment of which the general practitioner so universally shrinks as diseases of the skin. The reason of this, as is so well known, is because of the pertinacity with which they so generally withstand the modes of treatment instituted for their cure. The failure has been mostly due to ignorance, for in fact there is probably no class of diseases that respond more readily to proper treatment than do the common diseases of the skin. In truth, diseases of the skin are among the few afflictions of humanity for which we have what are termed specifics. That long list of acute illnesses, such as typhoid fever, scarlet fever, croupous pneumonia, and the many others with which you are so familiar, have demonstrated their unconquerability, and recognizing this fact, the physician to-day resorts to palliative measures and the prevention of and combating complications.

The successful treatment of diseases of the skin is dependent on information, and this information must cover three subjects: 1, A multiform etiology; 2, a variable pathology; 3, a discerning therapeutics.

For the sake of brevity we may divide diseases of the skin into five classes: 1, Eczema; 2, psoriasis; 3, acne; 4, the neuroses; 5, miscellaneous.

The subjects of the first three classes explain themselves. By the neuroses is meant the numerous kinds of herpes, a considerable proportion of the urticarias, some forms of pruritus, and some forms of alopecia. Under miscellaneous is included all other kinds.

I will speak first of eczema because of its common occurrence, constituting one-third of all diseases of the skin.

To understand eczema, and its treatment, it is necessary to know that it consists of but one process, namely, an inflammatory process, and the various forms of eczema are but the various stages of that process. Bearing this in mind, we know that the treatment of eczema varies with the stage of the disease. Before speaking of the treatment, let me present to you Bulkley's tabulation of the etiology of eczema.

CONSTITUTIONAL AND LOCAL CAUSES OF ECZEMA.

- Constitutional and General Causes.
  - Predisposing.
    - Heredity.
    - Gouty or Arthritic Diathesis.
    - Neurotic Diathesis.
    - Strumous Diathesis.
  - Exciting.
    - Debility.
    - Digestive Disorders.
    - Nervous "
- Local or External Causes.
  - Predisposing.
    - Climatic.
    - Occupation.
      - Sedentary.
      - Standing.
      - Irritating.
    - Diet.
  - Exciting.
    - Climatic.
      - Sudden or Prolonged Exposure.
    - Occupation.
      - Long Confinement.
      - Long Standing.
      - Irritants.
    - Diet.
      - Acids.
      - Sweets.
      - Tobacco.
    - Irritants.
      - Soaps.
      - Ointments.
      - Scalding.
      - Blisters, etc.

Bearing in mind this multiform etiology, you will readily see how important it is to inquire if any of these causes are still active. Treatment, therefore, must perhaps be directed to a change of environment, the alleviation of a diathetic condition, the building up of a debilitated state, and the selection of a proper diet. By the accomplishment of these things probably all cases of eczema would tend to spontaneous recovery. And yet in practice all this does not often come under your control. The case is presented to you when the exciting cause has probably been removed, and the patient asks for relief from his present condition.

The line of treatment resolves itself into two parts: 1. The general and systemic treatment, by which is meant the removal of exciting causes and treatment of any abnormal systemic conditions. 2. The local treatment, specifically directed to the eczematous process.

As to the general treatment, the indications and the manner of fulfilling them will readily suggest themselves to you, bearing in mind that the cause may be a chronic dyspepsia, diabetes, dysmenorrhœa, neurotic dentition in children, etc. The local treatment is governed by the stage of the disease, the treatment of the acute stage being very different from that of the chronic stage. In the acute stage the treatment is palliative, endeavoring to alleviate the inflammation and acute symptoms.

Having removed any known cause of irritation, if inflammation is very acute, it may be necessary to put the patient to bed and remove the clothing. Always avoid the use of water, especially hard water. In the erythematous and oozing stage, as a routine practice, it is probably well always to prescribe an indifferent cooling powder. This may be one of the forms of starch—rice starch being the finest. Of the others we might mention talcum powder, oxide of zinc, oleate of zinc, or bismuth subnitrate. If desirable, this may be flavored. A combination of these might be used, such as:

℞.	Rice powder	40 parts.
	Talcum powder	20 "
	Oleate zinc	10 "
	Bismuth subnit	5 "

This should be dusted freely on the surface, and repeated every two or three hours. Sometimes, on account of the intense pruritus, it is necessary to apply a cooling application. A solution of thymol, 1 to 1,000, is prob-

[1] Read before the Capitol District Medical Society, Decatur, Ill., May 5, 1892.

ably the best. Salicylic acid and menthol are also useful. A mixture such as the following is effective:

R.	Spiritus vini gallici	100 parts.
	Glycerinæ	15 "
	Aquæ coloniensis	15 "
	Tinct. benzoini	5 "
	Acidi salicylici	2 "
	Menthol	1 part.

After applying the above, the powder should be dusted on freely. Continue the cooling treatment as long as the active stage continues, and then use a mild ointment containing substances that influence the inflammation, such as:

R.	Ung. rosæ	20 parts.
	Vaseline	20 "
	Zinci oxidi	15 "
	Bismuth subnit.	5 "
	Ichthyol ammon.	3 "
	Acidi carbolici	1 part.
M.	Sig.: Apply twice a day.	

Nearly all cases of simple eczema will respond satisfactorily to this line of treatment.

In the chronic stage, where you have a thickened hypertrophied epidermis, scaly and hard, the object is to change the chronic to an acute form. For this purpose use a strong ointment to soften the parts and remove the scales. The best thing for this purpose is the unguent. diachylon, with the addition of five to ten per cent. salicylic acid, and continue to apply this until the skin is smooth, when one of the bland ointments should be substituted for an indefinite time.

There is a form of eczema manifesting itself chiefly at those locations where the sebaceous glands are numerous, *e.g.*, on the face, cheeks, chin, and scalp, also on the chest and on the back between the shoulders, characterized by a low grade of inflammation and the appearance of thick, yellow, greasy crusts, and very frequently accompanied by profuse dandruff on the scalp.

It causes the patient to have a very uninviting appearance, and untreated runs an extremely chronic course. And yet there is no form of skin disease which the dermatologist so gladly undertakes to treat as this seborrhoical eczema. It will probably invariably yield to a three to five per cent. ointment of sulphur and resorcin, which may be combined thus:

Ung. rosati	40 parts.
Zinci oxidi	8 "
Lanolini	8 "
Sulph. flor.	2 "
Resorcin	1 part.

There are two diseases that may more or less closely simulate seborrhoical eczema, and which are sometimes mistaken for it, namely, psoriasis and tertiary syphilis in its ulcerative forms.

The importance of a correct diagnosis will at once be appreciated, as the treatment in these conditions is wholly dissimilar. There are certain cardinal points in the differential diagnosis that are almost, if not quite, pathognomonic. Psoriasis constitutes about five per cent. of all skin diseases, and differs from eczema in that it is found more frequently among the affluent classes, and generally in people otherwise healthy.

Psoriasis always begins as minute papules, with a distinct but shallow infiltration, and covered with pearl-like scales. The papules have a red base a little larger than the scales. The scales are easily removed, and show a small bleeding point. The papules grow peripherally, and may partially heal up in the centre and form large diffuse plaques. Always look for the small plaques for diagnosis.

Psoriasis runs a very chronic course, and it is the general consensus of opinion that it is incurable. It causes very few subjective symptoms.

In psoriasis the infiltration is much more superficial than in syphilis, and the redness disappears on pressure; in syphilis the infiltration is much more marked, and the redness does not disappear on pressure. The scales in psoriasis are white and silvery; in syphilis they are gray, and on removal there is not seen the small bleeding point as in psoriasis. In seborrhoical eczema the scales are yellowish and fatty, and are nearly always found on the scalp. Seborrhœa causes the hair to fall out; psoriasis does not. Seborrhœa is generally on the scalp, nose, cheeks, chin, between the shoulders on the back, and on the chest. Psoriasis may appear on any part of the body.

As between the ulcerative forms of syphilis and chronic eczema there may be a close resemblance, and yet these can nearly always be differentiated. Chronic eczema never leaves a scar after healing, while syphilis, because of the depth of the lesion, always leaves a scar. The absence of the scar in a serpiginous inflammatory process is a negative diagnosis as regards syphilis.

Regarding treatment of psoriasis, the lesions can be made to disappear in six to ten weeks, but will probably return in the course of a year or two; one can safely predict a disappearance of the eruption, but not a permanent cure.

The opinion that psoriasis is a parasitic disease is steadily growing in favor, and treatment is being directed accordingly. Local treatment is most important, and the remedies most reliable are chrysarobin in ten per cent. ointment, or ten per cent. solution in traumaticine.

The treatment should not be carried beyond the fifth day, and never after an acute inflammation has been set up. After this a mild ointment should be applied. Pyrogallic acid is one of the best remedies. It can be used in ten per cent. solution, similarly to chrysarobin. It does not cause an inflammation, but colors the skin dark. Application should cease after the discoloration appears, and a mild ointment substituted.

Tar in the form of oil or tincture, or Wilkinson ointment, is good, as is also naphthol β in ten per cent. ointment. Internally, arsenic and potassium iodide in large doses have long been used, and while it may be well to conjoin their administration with external treatment, their usefulness is questioned. Acne vulgaris is one of the most interesting diseases of the skin, because of its common occurrence and of its persistent chronic course. It was not until Unna made clear the etiology and pathology of this disease that its treatment was successfully undertaken. Acne is not a blood disease—to use a popular phrase—and internal medication will generally altogether fail in its purpose. Acne is a local disease, and should be treated locally. It is an inflammatory process affecting the sebaceous glands of the skin. The process may be divided into two parts: 1, Closure of the sebaceous follicle and formation of comedo; 2, suppuration.

The acne is due to a solidification of the secretion within the sebaceous glands, produced by various causes. The amount of fatty sebaceous matter is gradually increased, the gland duct is filled up, and with the undue pressure upon the neighboring parts, together with the previous entrance of the staphylococcus aureus et albus, the acne pustule is produced. If left undisturbed, extensive infiltration beneath the cutis is developed, forming hard nodular masses and the occasional formation of extensive abscesses.

Understanding the cause and process of the acne pustule, the treatment is simple and readily suggests itself. The indications are to dissolve out the plugs of hardened sebaceous matter and the extermination of the staphylococcus, and the prevention of its further development. The hardened sebaceous matter can be dissolved by the occasional washing with an eighty per cent. alcoholic solution, to which as a germicide we may add two to five per cent. of resorcin. At night a ten per cent. sulphur ointment should be thoroughly rubbed in. By this method the occluded glands are relieved, and the causes of suppuration are removed.

When, however, after a long continuance of the pro-

cess the outlet of the glands becomes obliterated by inflammatory tissues, and suppuration is not brought about, there remains in the occluded duct small masses of caseous sebaceous matter. These are not absorbed, but remain encysted in the tissues of the skin for an indefinite time. Internal or external medication is useless in these cases. The treatment is surgical. With a fine-pointed bistoury (I use a cataract knife) make a puncture deep enough to reach the encysted matter, and then apply sufficient force to express it. Then, by treating the wound antiseptically, the incision kindly heals.

On general principles it is probably well also to encourage the various secretive organs, that a tendency to recovery may not be balked by faulty elimination.

The treatment of the neuroses will be taken up at a future time.

A STUDY OF NEUROTIC ECZEMA IN ADULTS.

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Although authorities in a general way refer to nervous causes in eczema, no specific variety attributed to this factor has as yet been isolated.

That neurotic eczema is in itself a variety is evidenced by its location upon the extensor surfaces, by the arrangement of its lesions, and by the course of the disease, its condition varying under circumstances which are certainly not local. The discussion of a few typical cases may lead to a better appreciation of the subject presented.

Case I.—Hannah H——, domestic, aged fifty-five; patient passed the climacteric five years ago, and among other disorders connected with this period had an eruption on the face, similar, as she states, to that now evident. It disappeared after about four weeks' duration. From that time until eighteen months ago she was free from eruption of any kind. Two years ago she went to Ireland, and during the passage was often exposed to changes of temperature. She was subjected to mental worry on account of death in the family and other troubles. She contracted malaria there, and was sick most of the time. Soon after her return, about eighteen months ago, the present eruption appeared. In addition to this, she has had frequent attacks of malaria, during which she is nervous, sleepless, and unusually constipated. The eruption is notably worse after these attacks.

The general condition of the patient at present is good, but she is exceedingly nervous. The urine showed on examination only a slight excess of urates.

At her first examination the condition presented was as follows: The eruption is limited to the lower two-thirds of the forearms and legs, and to the dorsal surfaces of the hands and feet. On the dorsum of the hands, in the interdigital spaces and backs of the fingers, encircling the wrist-joint and the forearms as far as the upper third, are a number of small patches of various sizes and of various shapes, but in the main circular; these patches are in part squamous and in part weeping, showing here and there a patch composed of a group of unbroken vesicles, and occasionally a larger patch in which all three features are shown. The skin of the whole affected surface, but more especially the distinct patches, is thickened and somewhat infiltrated. Unlike eczema, as usually observed, the separate patches are sharply defined. The patch is formed of closely aggregated groups of vesicles in the various stages of papules, broken vesicles with watery fluid exuding, or a raw surface covered with squamæ. But whatever the nature of the patch, its periphery is found to be composed of closely set papules or vesicles, and the division between the diseased area and the healthy skin is sharp and absolute. In short, the separate lesions may be described as patches composed of closely aggregated papules or vesicles, or both. In places the edges of the patches have coalesced, forming large areas of diseased skin, with here and there an island of healthy tissue.

It is perhaps well to state that the term "healthy" is here used in a limited sense, implying that the slight redness and infiltration is not an eczematous inflammation, but due solely to the proximity of the active inflammation in the patches.

On the back of the hands and upper part of the forearm are a number of patches which have appeared recently, and hence merit attention, by reason of their being typical or characteristic lesions in the variety of eczema which we are now studying. They are circular in shape, varying in size from one quarter to one inch in diameter, with sharply defined edges, and are composed of vesicles or papules, in some cases of both, closely aggregated. There is in these lesions no scaling nor weeping, the vesicles not being ruptured. Owing to the recent appearance of the inflammation in this locality, the tissue intervening between the patches is normal, no redness being observed. The skin presents here and there, at rare intervals between the patches, isolated papules or small groups of three to ten papules each. On the older patches, where the disease has persisted for some time, we find crusts identical in every particular with those found in eczema due to other causes. These crusts when removed expose a copiously weeping surface, with here and there a bleeding point. In other words, the process is entirely similar to that observed in ordinary eczema, the difference in the physical signs being due to the peculiar arrangement of the lesions and to the location.

Now, as to the location, while the disease in this instance affects both extensor and flexor surfaces, yet at a glance it is noticeable that a special predilection seems to exist for the extensor surfaces, the lesions being small and widely separated on the flexor surfaces. This, as we all know, is directly contrary to the usual course. The lesions are located on symmetrical portions of the body.

The eruption on the legs presents the same appearance and general characteristics as on the arms, and hence no detailed description is necessary.

The descriptions of the lesions and points in history bearing on the disease have been given in this case with more minuteness and at greater length than may seem necessary to some, but it is because the case presents many points that are important, both in the previous history and in the physical signs; and also because the lesions were characteristic in appearance, the patient having had no treatment for the present attack before coming under my observation.

The treatment was mainly directed toward strengthening the nervous system and reducing the congestion of the diseased areas. The local treatment was directed toward correcting, as far as possible, the conditions present in the diseased areas. We will enumerate here a few of the remedies employed, and the mode of prescribing them. The reasons for their use will be explained later on.

℞ Fl. ext. ergot ..... ʒ iv.
Fl. ext. viola tricolor (pansy) ..... ℥ jss.
Aqua ..... ad ℥ iij.
M. Sig.: ℥ j. t.i.d.

℞ Magnesii carbonatis,
Pulvis zinci oxidi .....āā ʒ j.
Ichthyol ..... gr. xl.
Aqua .....ad ℥ iv.
M. Sig.: Apply to diseased surface three or four times a day.

It is needless to state that the normal functions must be regulated, and of these the most important is a regular daily movement of the bowels. For this purpose I prefer cascara sagrada. It has no lasting or ill effects on the intestines, and may be continued for a long time without leaving the patient constipated. Such was the line of treatment followed. The patient improved rapidly. Later a tonic of iron, strychnine, and quinine was ordered.

and continued for some time after the disappearance of the eruption, which was in about four weeks from time of beginning treatment. The case was kept under observation for four weeks after this, and showed no evidence of return.

Case II.—Gilbert P——, weaver, aged thirty-five. On careful questioning of patient, I could find no evidence of functional disturbance other than obstinate constipation. His occupation was sedentary and he suffered from nervousness, probably due to lack of exercise. He had been troubled with an eruption for two years. It first appeared on the backs of the little fingers, later spreading to the interdigital spaces and backs of the other fingers. At the time of consultation, the skin between the fingers was sodden from exudation. The skin here was too thick for vesicles to form, and the epidermis came off or was raised as a whole in consequence, and as the separate patches had coalesced, it appeared to be one large patch, at the border of which the distinct sharp division from healthy tissue was easily perceptible. On the back of each wrist was a large circumscribed and sharply defined patch. The patches were in all cases moist and very much inflamed, the edges being composed of vesicles. Within the limits of the patch the skin was thickened. The pruritus was excessive. The line of treatment was somewhat different from that in Case I., the conditions not being the same. The aim here was, first, to correct the sodden condition of the tissues. This was effected by means of an ointment :

℞. Magnesii carbonatis,
Acidi borici.....āā ʒ j.
Ungt. zinci oxidi ..... ʒ j.
M. Sig. : Apply morning and night on a piece of lint.

The bowels were meantime regulated by fl. ext. cascara sagrada. Under this treatment the improvement was marked for a time, and at the end of the second week the following was ordered to reduce congestion and as a general tonic.

℞. Tinct. ferri pomati,
Fl. extr. ergot.....āā ʒ iv.
Tr. nucis vomicæ..... ʒ ij.
Aquæ.....ad ʒ iij.
M. Sig. : ʒ j. t.i.d.

More exercise was recommended. A cure was effected in about six weeks, and one month's further observation showed no return.

Case III.—J. M——, longshoreman, aged thirty. In this case, as in the previous one, there was no distinct history of functional disturbance. The man's occupation subjected him to a good deal of exposure, and he stated that he was very irregular in sleeping and eating. The eruption has been present at various times since childhood. It has appeared once on the hands, and once on the ankles, but in each attack the lesions were symmetrical. The lesions present at the first consultation were on the backs of the hands, and consisted of circumscribed patches formed of papules and vesicles, some irritated and weeping, others crusted. The patches were at this time absolutely symmetrical. The itching was excessive. The patient was nervous. The following was ordered :

℞. Ichthyol..... gr. 20
Ungt. zinci oxidi ..... ʒ j.
M. Sig. : Apply twice a day.

For a few days improvement was noted, when the patient left the hospital. He returned in two months' time with elevated, inflamed, and weeping patches symmetrically situated on the backs of the hands and along the ulnar border of the wrists. The strength of the ointment was increased to thirty grains, or six per cent. The improvement was rapid, and patient was discharged with no trace of eruption remaining.

Two months later he returned, with patches of all sizes and shapes and more or less inflamed. All the lesions were more or less infiltrated. The periphery of each patch consisted of a narrow line of vesicles. In some places subjected to motion, as over the wrist-joints, fissuring was observed. The following was ordered :

℞. Plumbi carbonatis..... gr. 80
Resorcin..... gr. 60
Ungt. diachyli..... ʒ iv.
M. Sig. : Apply twice daily.

In two weeks all trace of eruption was removed, and the patient was discharged. He returned in about ten weeks with a fresh, but light, outbreak. The treatment was the same as at last consultation, and the result was prompt.

This case is interesting as illustrating the tendency of the eruption to continual relapses, exasperating alike to patient and physician, showing also the symmetrical arrangement of the lesions, and the futility, so far as permanent cure is concerned, of local medication only ; for it will be noted that in this case no internal treatment was employed.

Case IV.—E. M——, servant, aged forty-three. Constipation was the only functional disturbance ascertained. The nervousness of the patient's manner and speech was noticeable. The eruption appeared on the hands nine months before the patient came under observation. The general characteristics at this time were groups of papules or vesicles of various sizes, forming patches, circular in the main, with sharply defined edges, moist in character, and located on the extensor surfaces of the hands and wrists. It had appeared on the extensor surfaces of the legs during the last few days. Treatment was as follows :

℞. Magnesii carbonatis,
Pulv. zinci oxidi .....āā ʒ j.
Ichthyol..... gr. 40
Aquæ.....ad ʒ iv.
M. Sig. : Apply several times a day.

℞. Fl. ext. cascara sag..... ʒ iv.
Tr. nucis vomicæ..... ʒ ij.
Aquæ ..... ad ʒ iij.
M. Sig. : ʒ j. t. i. d.

Under this treatment there was improvement, but it was slow, and at the end of two months we added fl. ext. ergot to the internal treatment. The dose being ten drops three times a day. The improvement was then more rapid and the patient was discharged cured at the end of four months. By request he reported occasionally to the clinic during the next six months, no return being noted.

Case V.—W. R——, surveyor, aged twenty-four. History was as follows: Suffers from obstinate constipation and indigestion, the stomach being exceedingly irritable. In his profession, when out on duty he is compelled to take his food cold. At such time he suffers very much from indigestion and nervousness, and the eruption is more irritated than usual. The duration of this attack is one year, during which time he has never been entirely free from it. The patient is exceedingly nervous and restless. The lesions presented are circumscribed patches on the cheeks, forehead, and extensor surfaces of the forearms ; they are well marked in outline and present the characteristics enumerated above.

The treatment was directed with the view to correct the indigestion and constipation, and to strengthen the action of the nervous system.

℞. Tr. nucis vomicæ..... ʒ ij.
Acidi phosphorici dil ..... ʒ iv.
Tr. gentianæ.....q. s. ad ʒ iij.
M. Sig.: ʒ j. t.i.d.

℞. Acidi salicylici..... gr. xv.
Ungt. zinci oxidi..... ʒ j.
M. Sig. : Apply morning and night.

The bowels were regulated with comp. cathartic pills as needed. Within the first week improvement was noted, and extract of ergot was then ordered in doses of ten drops t.i.d. to check the congestion of the skin. The favorable course of the disease was checked, after he had

been under treatment three weeks, by an attack of influenza from which it required a week or two to rally. The improvement then continued, and the patient has been for some time almost free from the eruption, but the least indiscretion or dissipation will cause relapse. He is still under observation.

Case VI.—Mrs. B. F——, aged thirty-eight. Eruption has been present for ten years. Prolonged constipation and a generally listless, overworked feeling were the only points ascertained in the history. The patient was pale, anæmic, and nervous. Each cheek presented a large circumscribed patch, one and a half inch in diameter, composed of thickly-set papules. The patches presented scaling, and there was considerable thickening of the skin over the area of the patch. On the forehead were numerous small patches presenting the same general characteristics, though, being of later formation, the thickening of the skin was not evident. No scaling was present.

The history is but a repetition of the others. Internal treatment to regulate the natural functions and the nervous system, and local treatment, according to the conditions presented, would cause improvement, but the slightest indiscretion would cause relapse. Thus relapse followed relapse with tantalizing regularity, in spite of the watchfulness of physician and patient. She is still under observation, receiving treatment when necessary.

The case is mentioned because of the location of its lesions, the significance of which will be shown later in the discussion.

Case VII.—G. W. B——, inmate of a charitable institution, aged sixty-three. Patient presents following history: He was, until five years ago, a prosperous broker, and at this time lost all that he had in speculation. He has no family living, and until lately has lived on the charity of friends. His health is wrecked, and he presents symptoms of disseminated sclerosis of the cord. Constipation is present in aggravated form. The heart is regular but weak. No signs of previous syphilis or arterial sclerosis. Great mental worry and some privation preceded the outbreak of the eruption. The eruption first appeared on the shoulders over the deltoid region, and when first seen covered the extensor surfaces of the arms and forearms, the front of the thighs and knees, and the circumference of the legs, being more developed on the front than on the back of the latter. There was considerable infiltration and scaling over all the lesions. Treatment was as follows:

℞ Fl. ext. viola tricolor (pansy) ..... ʒ iv.
Tr. nucis vomicæ ..... ʒ ij.
Fl. ext. ergot ..... ʒ iv.
Aqua ..... ad ʒ iij.
M. Sig.: ʒ j. t.i.d.

℞ Ungt. picis et zinci ..... ʒ iv.
Sig.: Apply twice daily.

The result was good, and for two weeks the patient improved rapidly, when we attempted to apply an ointment as follows:

℞ Fl. ext. ergot ..... ʒ iv
Ichthyol ..... gr. 40.
Ungt. zinci oxidi ..... ʒ iv.
M. Sig.: External use two or three times a day.

This treatment did not allay itching on the shoulders and arms sufficiently, and the patient kept the parts irritated by scratching. It acted well on the legs. It was discontinued on the arms and forearms and the first ointment was reapplied. Under this treatment the patient was cured in one month, and then entered a home for the aged. Since that time he has had two attacks, and each time it has required about four weeks to get him into shape.

Case VIII.—H. N——, schoolboy, aged thirteen. Eruption has been present since early childhood. After a careful questioning and examination nothing wrong could be detected in the normal functions. He suffers from asthma quite a good deal when near the sea-shore. At such times the eruption is much worse. The patient was a native of Brooklyn, and when away from home suffered very little from asthma, but would be taken with fresh attacks whenever he returned. He was well nourished and large for his age. The lesions were on the extensor surfaces of the forearms and arms, in front of the thighs, on the backs of the legs, and on each cheek. They were more or less circular, sharply defined and weeping, scaling, or simply papular, according to the various stages of the duration. Treatment:

℞ Fl. ext. viola tricolor (pansy) ..... ʒ iv.
Tr. nucis vomicæ ..... ʒ ij.
Fl. ext. ergot ..... ʒ iv.
Aqua ..... ad ʒ iij.

The doses here were rather large, but caused no inconvenience. The local treatment was:

℞ Ichthyol ..... gr. 40.
Fl. ext. ergot ..... ʒ iv.
Ungt. zinci oxidi ..... ʒ jv.
M. Sig.: Apply to lesions twice a day.

The improvement was rapid until the patient desired to go home, when he relapsed. This relapse continued to occur at every visit home, until finally permission to return was refused. The asthma was also treated with indifferent success.

The case was finally cured of the eruption, but not until four relapses had occurred. The case will relapse on the slightest indiscretion.

The object of this paper is to ascertain, if possible, by a careful study and analysis of each case, the etiology of this form of eruption, and to consider its management. As a fitting introduction to the study it will probably be necessary to consider the various disorders that we have seen in the foregoing histories to precede or accompany this eruption, and to study their bearing and influence in its production. Among these disorders, functional and nervous, the most common, and presumably the one having the most bearing on the disease under discussion, is a general weakness of the nervous system. This was noted in the history of every case except the last, and in this instance the patient suffered from a disease generally acknowledged to be nervous in its origin. We have seen that the eruption was preceded by longer or shorter periods of business cares or mental suffering. It is immaterial whether this mental suffering was occasioned by prolonged sickness, trouble or anxiety, or privation; the result is the same, and this result, I think, is in every case that condition of general weakness of the nervous system known as neurasthenia, in which the functions of the nerves are either weakened, or the nice balance of power between the initiatory and the inhibitory centres is destroyed. Thus, either the normal processes of life are too violently, or too feebly, performed, or the action is irregular. From this follow functional irregularities seen in many of our subjects, and the flushings of the skin often confined to particular areas (Strumpel). Occasionally we see more or less permanent vasomotor paralysis, and this would naturally occur in those parts most exposed to influences producing an erythematous condition of the skin, or in those areas unusually well supplied with capillary vessels. Understanding, as we do, so little in regard to the functions of the trophic nerves and the exact mechanism of their action, our discussion of them must necessarily be brief and, I fear, unsatisfactory. At any rate, physiologists tell us that there are certain nerves which affect or govern the nutrition of the parts to which they are distributed. It has not yet been definitely settled whether they run as fibres of the sensory nerves or with the sympathetic system, but it is probable that their greatest influence on nutrition is connected with the power they have of affecting the blood-supply of a part, and secondarily, by their *attributed* power of regulating the absorption by the tissues of the nutrition brought by the blood. The influence of the

nervous system then, in producing, or conducing to, the eruption of eczema, is probably confined to its action on the vaso-motor system and nutrition.

At a later stage we will endeavor to show how and why this eruption thus results.

The remaining irregularities may be summed up under the head of functional disorders. Although important, they are too well known and their results too well understood to require more than a superficial discussion. The most common among these is constipation, often obstinate and of long standing. It may be due to many causes, among which may be mentioned duodenal indigestion, and in every case there is absorption of poisonous substances from the retained fæces. The effect of this absorption is first seen in the apathetic manner of the patient; later he complains of a continual dull headache (Strumpel) Another functional disorder is indigestion, duodenal and stomachic, the latter less often than the former unless it be chronic; for the sympathetic nerves are so intimately connected with the stomach that any irritation in this quarter will cause immediate flushing of the face (rosacea), or localized infiltration from dilated blood-vessels over the body (urticaria). These phenomena are purely reflex through the medium of the sympathetic nervous system acting on the vaso-motor nerves.

Disorder of the reproductive organs is more common than generally supposed; the action here is also reflex (Strumpel). Sickness involving great strain on the nervous system, as the grippe, acts through the nervous system as mentioned in the opening of the discussion. Exposure to extremes of temperature may act in either or both of two ways: 1, By lessening the resisting power of the tissues; and 2, if long continued, by producing a chronic condition of more or less hyperæmia from partial paralysis of the blood-vessels.

It is probable that all of these conditions, except the two last enumerated, act in one way, by lessening the inhibitory power of the higher nervous centres, and destroying that balance of power necessary to a proper action of the trophic nerves and vaso motor system. In one case we see illustrated the connection between the eruption and such purely nervous troubles as asthma. The nervous trouble here is easily explained, if we agree with those authorities who hold that asthma is due to a sudden hyperæmia or urticarial swelling of the mucous membrane of the bronchi. If, on the other hand, we agree that it is due to a spasmodic contraction of the bronchi, the explanation is not plain. This connection established between asthma and neurotic eczema points toward a disturbance of the sympathetic nervous system as a probable cause, or at least a determining factor, of the latter.

Now, for a thorough discussion of the etiology it will be necessary to study the local surroundings and ascertain whether the eruption is dependent on them for its appearance; next, to show the evidence of internal influence in its production. In the first few moments of study of external influences we are convinced that these, if not the primary cause, are at least a potent factor in determining the location of the eruption. In a measure this is true. I have purposely enumerated in the histories the various external influences surrounding the individual cases, and though at the first glance they seem to be of importance, yet on a closer investigation, taking into consideration the location of the lesions, their sharply defined area, and the absolute symmetry of localization, we see that such cannot be the case, *i.e.*, that the eruption is not local in its origin. Let us study the cases in detail.

In the first case there is absolutely no history of local irritation, with the exception of exposure to cold eighteen months previous to the present outbreak. The fact of the examination of urine showing urates, and the fact that the patient had previously had rheumatism, might possibly point to the inference that the eruption was due to retained products that should have been excreted by the kidneys, such as uric acid, etc. But here we note that the lesions are not those seen in the so-called rheumatic eczemas. Then, too, the history of nervous trouble, of attacks of nervousness and constipation being followed by exacerbation of the eruption, and the result of the treatment, all point to the conclusion that it was due to reflex nervous influence.

In the second case, again, we find no evidence of local action, only the nervous history.

The third case presented no history of any kind. The diagnosis being sustained only by the appearance of the lesions and the constant recurrence of the eruption, which, if it were due to local conditions would disappear with the removal of the irritating conditions.

In the fourth case the history is imperfect again, only the course of the disease and the appearance of the lesions guiding the diagnosis.

Case V. presents the most distinct neurotic history of any in the list. The location is not only typical of its nature as reflex, being that of rosacea and the so-called infantile eczemas, but the history shows that the respective exacerbations are dependent only on disarrangements of digestion, and are accompanied by periods of excessive nervousness. There is absolutely no history of irritation other than reflex at any time.

Case VI. is similar, but this history is not so conclusive.

In Case VII. we again have a typical history and a typical eruption; long period of mental worry and unmistakable signs of disease of spinal cord. The lesions were confined exclusively to the extensor surfaces, and differed materially in appearance from those of senile eczema, with which here it might otherwise be confounded, if the patient's age were alone considered. Again, in the eighth case we have the history of disease commencing in infancy as reflex eczema, and persisting under improper treatment, and the accompanying complication of asthma, with each attack of which the eruption becomes more irritated.

Although in the cases cited, as in others studied in this connection, the history of a preceding local irritating condition is most conspicuous by its absence, it cannot be altogether eliminated. We are all surrounded by conditions more or less injurious, and the cases under consideration are no exception. If we admit these to have been present it will not alter the conclusions, for it is hard to admit their direct influence. Bearing in mind the appearance and peculiarities of location of the lesions described in the histories, it is hard to conceive that external influences, so varied as those to which eczema is ascribed, will act through a series of cases affecting symmetrical parts of the body, and showing a tendency to attack the least tender parts of the skin rather than the other. To admit this we must admit a peculiar liability of the surfaces thus affected by preference, and admitting this we admit an internal influence dependent on the nervous system. Except in rare instances I have seen no case in which I could see evidence that the location was influenced by a previous condition of irritation. This irritation was in almost every case due to malnutrition, dependent on varicose veins, and the eruption appearing on such surfaces was not, in appearance, characteristic of neurotic eczema, but seemed rather to be an irritative eczema accompanying the latter. The same will be found true whenever an eruption can be shown to be due in part to external influences. It is on this ground that I contend that neurotic eczema is due to nervous influence alone.

In regard to the theory of direct action on the skin of retained products of excretion, such as uric acid, etc., I think the evidence is against it. It is true that we have eczema in rheumatic and gouty subjects, due probably to this cause, but the appearance and course of the eruption is different from that under discussion. In fact the eruption in such cases does not materially differ from ordinary eczema. The effect of products absorbed from

the bowels during constipation is not yet fully explained, but it is probable that these are toxic alkaloids which act principally on the nervous system. Certainly the lassitude and pain in the head in subjects so affected point to this conclusion. That they affect the skin in some way, reflex or direct, is well recognized. The reader is referred for a consideration of this point to an article in *The Lancet*, December 5 and 12, 1891, on the subject of "Duodenal Indigestion," by Dr. Allchin. Having excluded influences not internal, and indicated a possibility of diagnosis between eruptions due to direct action of retained products of excretion and those due to action through the nervous system, called reflex, we will proceed to discuss the bearing of the nervous system on the disease.

In the nervous system there are but two varieties of fibres that need to be discussed in this connection; these are the trophic and vaso-motor nerves. In regard to the former I am sceptical as to their influence. If the trophic nerves are connected with the vaso-motor system and act by influencing the blood-supply to a part, then undoubtedly their influence is great, otherwise the connection is not plain. The sensory nerves play also, I think, but a subsidiary part in the etiology of the eruption, the intense itching and discomfort being due either to over-stimulation by increased flow of blood, or to pressure by exuded plastic material. The most important part is played, it seems, by the sympathetic or vaso-motor system, and the stimulation is reflex. The inhibitory centres being excited or irritated, and losing control over the "balance of power" at certain points, dilatation of the blood-vessels with exudation of plastic material occurs, forming papules, vesicles, etc.

That a vaso-moter disturbance is, in a great measure, responsible for the eruption, is, I believe, supported by the following features in the clinical history of the eruption: 1. The symmetrical location of the lesions. 2. The sharply defined margin of the affected area, which, in connection with the above feature, points to a nerve influence in its distribution. 3. The location of its lesions on the extensor surfaces of the extremities and on the face, this being the location chosen by erythema multiforme, rosacea, etc., which are admittedly of reflex nervous origin. 4. In a few cases the distribution can be shown to be confined to surfaces supplied by certain groups of nerves, as in Case VII., where the distribution was sharply limited.

It is well known that from the close relation existing between the vaso-motor system and the nerve-supply of the digestive canal prolonged irritation of the latter, as from chronic indigestion or constipation, will cause a reflex hyperæmia of the skin at certain points, notably the face, and sometimes on the extremities. The fact is well shown in rosacea, in which a full meal or irritating injesta will cause flushing over the affected area. Again, the reflex action of the vaso-motor system in producing circumscribed lesions in the skin is shown in the wheals of urticaria. Exudation seen here occurs through some ill-understood action of the nerves on the walls of the blood-vessels, the sensory nerves being secondarily affected by pressure. The exuded material not being plastic, reabsorption easily occurs. In certain diseases of the reproductive organs of women the same phenomena are sometimes observed.

There may be some curious enough to inquire why every person who is constipated or nervous or worn by anxiety is not then afflicted with eczema of this character. To this I can only answer that the skin must be in a condition to be excited to this inflammation, or the nervous system too weakened to resist the impulses due to disordered action. The first may result from a natural tendency of the skin to catarrhal inflammation, which condition is found in some people. The second may be due to decreased vitality of the nervous system from prolonged strain, which in itself, by reducing the general vitality and resisting power of the system, naturally lessens that of the skin, and paves the way for inflammation.

Now, since these influences, be they what they may, act on the whole nervous system with equal strength, it is natural that the weaker parts shall be the first to give way. This accounts for the sharply defined areas of eruption, and for only certain areas being attacked.

It is natural to suppose that if the conditions giving rise to the eruption are not in some way counteracted, other nerves will be affected and other areas involved. This is precisely what happens. With no treatment, new areas are constantly involved, and the cause of the eruption is also indicated in the manner of its spread, for the diseased areas never spread by the edge advancing, which would indicate direct action of the cause on the skin and spread of its area of action, but by the formation always of new patches similar in appearance to the old. This points to the theory that separate and distinct nerve-trunks are successively involved.

The symmetry of the lesions, as to location, points to the theory that there is a connection between the nerves supplying the symmetrical areas, and this fact leads me to select the sympathetic system as the most probable area of the trouble, since the sympathetic ganglia connect with those of the opposite side, across the vertebral column, and it is therefore probable that irritation of one will produce irritation of its fellow.

Having determined that the sympathetic system is at fault, we limit the field of research, and, for the reasons mentioned above, select its especial subdivision known as the vaso motor system as the primary cause of the eruption. It may not be amiss to give again a short *résumé* of the physical signs and clinical course before discussing the diagnosis. 1. The location of the lesions is in every case symmetrical. 2. The eruption tends to attack localities not as a rule liable to eczema, at least in its earlier stages, *i.e.*, the extensor surfaces of the extremities. 3. The arrangement of the lesions differs markedly from that usually observed in eczema. The lesions are not scattered indiscriminately over the affected surface, but are grouped in patches which are more or less circular. These patches are formed of closely aggregated papules and vesicles. The sharply defined edges are made up of a line of papules or vesicles. The periphery of the diseased patch remains distinct, sharply defined, and absolute at all stages. 4. The spread of the eruption is never by a gradual extension of the area of the separate patches, but by the formation of new lesions, in every respect retaining the characteristics of the older ones. 5. The dissolution of a patch is accomplished, not by a gradual shrinking of the diseased area, but by a decrease of inflammation, the original area remaining the same in extent until the return to the normal state is effected. 6. The eruption has a tendency to frequent relapses, for which often no immediate cause can be ascertained; and this in spite of the most careful attention.

The diagnosis must be made between this form of eczema and the following: 1, Parasitic eczema; 2, irritative or "trade eczema;" 3, chronic circumscribed eczema; 4, gouty or rheumatic eczema; 5, seborrhœic eczema when well developed; 6, eczema marginatum or ringworm.

The presumptive diagnosis is based on the signs and characteristics enumerated above.

The differential diagnosis will be taken up in the order of importance.

1. The form of eczema most likely to be mistaken for the one under discussion is that known as parasitic eczema, due to the action of a number of minute organisms on certain circumscribed areas. In this form we also find patches of diseased skin sharply defined, but there is no symmetry of location observed. The patches are irregular in shape, not composed of aggregations of papules or vesicles. The periphery shows, instead of a raised border of papules, undermined epithelium. Infiltration of the patch is rare. The eruption spreads by enlarging of separate patches, which is accomplished by undermining the epithelium, a distinctive sign. No pe-

culiar location is observed, though it occurs usually on exposed surfaces, as on the hands.

2. Irritative and trade eczemas are due to irritants; the affected area is usually circumscribed, though not confined to patches, and the borders of the eruption are not sharply defined, but fade gradually into healthy skin by the papules becoming less thickly set. A history of previous irritation is always obtained.

3 In chronic circumscribed eczema there is usually a history of a previous acute outbreak involving a larger surface than that now affected. The periphery is not sharply defined. The patch is usually large and single. It may involve both sides of the body, but symmetry, if present, is accidental. Usually it is the flexor surfaces of the joints that are involved.

4. Gouty or rheumatic eczema is usually unilateral, the patch is large and irregular and very much irritated. In case of spread of the disease, the patch enlarges peripherally. There is a history of gout or rheumatism, and often there are enlarged metacarpal joints. The urine is scant and shows excess of urates.

5. Seborrhœic eczema when well developed is patchy in character, the edge being well defined but not composed of vesicles or papules. The crusts, if any, are in this case greasy to the feel, and brittle. The disease presents a history of slow development, commencing with pityriasis or dandruff on the head, and developing from above downward. There is in seborrhœic eczema no symmetry of location, and the points most favored are the scalp, face, and chest, sometimes the groin and axillæ.

6. Eczema marginatum is merely an irritated and extensive ringworm usually found around the buttocks and groin. There are patches with rather sharply defined edges, but the history is always that of a small area of ringworm at first, and subsequent spread of the eruption with clearing in the centre. The edge is constantly advancing.

The treatment should be both internal and local. The internal treatment should be directed first toward correcting any functional disorder present. To this end we should submit our patient to a careful examination and questioning. As a hygienic measure, the nervous system should be relieved as far as possible from any disturbing influence, such as mental worry, business cares, etc. To this end perfect rest and cessation from business or household cares should be enjoined. The patient should have at least one free movement of the bowels every day. Any existing digestive trouble must be corrected. Every organ should be examined to determine the existence of reflex influence, and any disorder of the reproductive organs that may be present must be corrected. Tonics should be administered to strengthen the inhibitory powers of the nervous system and to improve the nutrition of the whole body. Phosphorus and strychnine are probably the best remedies for fulfilling this indication.

Acting on the theory of the vaso-motor disturbance as a cause of the eruption, ergot was given in several cases with splendid results. Although I have not yet tried it, I am inclined to think that the galvanic current to the spine would be of benefit. Local treatment should be governed entirely by the condition found.

I give below a few combinations that have proven useful in practice. For weeping eruptions a nygroscopic lotion is necessary, and for this purpose I prefer the following combination:

℞. Magnesii carbonatis,
Pulvis zinci oxidi.....āā ʒss. to ʒj.
Aquæ rosarum..... ʒiv.

There is a lotion somewhat similar to this in which calamine is substituted for the magnesium carbonate, but I have found the calamine to be always more or less irritating. In the dry forms, with slight scaling and induration, I use one of the following:

℞. Acidi salicylici..... gr. v. to gr. xv.
Ung. zinci oxidi..... ʒj.
M. Sig.: For external use.

℞. Ung. picis et zinci ..... q. s.
Sig.: External use.

℞. Ichthyol..... gr. x. to gr. xxx.
Ung. zinci oxidi..... ʒj.

In those cases where the congestion is marked, ergot gives good results applied locally in the form of an ointment, or the fluid extract may be advantageously combined with any of the above formulæ. Where the induration is very marked the unguentum picis et zinci is very good.

It is unnecessary to give further details. It would seem to be sufficient to sketch out a line of treatment, since the conditions of each case of eczema are always varying and each condition must be treated according to circumstances.

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Clinical Department.

A CASE OF VAGINISMUS.

By ALBERT KROG, M.D.,
NEW YORK.

About five months ago Mrs. N. M—— called upon me, from New Jersey, with the following history: She had been married five months, had always enjoyed perfect health, although she was of a somewhat nervous disposition and anæmic. Quite soon after her marriage coition had become impossible. The accompanying pains were something intolerable at first, making, as stated, coition entirely impossible. There was no discharge, no leucorrhœa; defecation and urination were without pain and regular, appetite good.

Upon my request that a thorough examination of the parts locally would be necessary, she gladly consented, but doubted the possibility of a digital examination. As she lay upon my operating-table, inspection showed nothing but a slight œdema and redness of the external parts. Upon my attempt to introduce my index-finger, the muscles of the floor of the pelvis became suddenly perfectly rigid; the muscles of the thighs began to contract spasmodically, the patient cried and complained that I was causing her the most agonizing pain. No amount of persuasion could induce her to become more quiet or calm, and as she became more and more hysterical I was compelled to desist from all further examination.

I had not even been able to separate the labia, nor had I been able to see the hymen or what was behind it.

A second examination, a week after, was even less successful than the first. The pains had grown more intense, the parts so hyperæsthetic that even the clothes coming in contact produced great agony. Her condition was deplorable, and her marriage life was far from being a happy one.

There was no doubt that the existing symptoms were those of vaginismus, the cause of which I had not as yet been able to detect. Consequently it was considered best to anæsthetize her and act at once according to the existing lesions.

My friend Dr. Waechter kindly administered the chloroform. When perfectly under its influence, and the parts had thoroughly relaxed, my finger entered the introitus vaginæ without the least resistance. The uterus and vagina were explored, but nothing abnormal could be detected.

Nevertheless, a close ocular inspection revealed the following conditions: The hymen had been lacerated into four distinct parts, each of which was more or less triangular in form. On the apices of each of these a small hypertrophic nodular mass (like corns on the feet), of the most extreme sensitiveness, was detected. Naturally I resorted at once to the excision of the entire hymen. There was but little hemorrhage; the resulting raw surface was left to cicatrize. A tampon of unguentum iodo-

formi was inserted into the vagina, large enough to distend the entire cavity thoroughly. Calling upon my patient the next day, I could realize at once the success of my operation as expressed by her countenance.

She could change the tampons and irrigate the parts with but very little annoyance, except, as she states, a feeling of slight soreness. The introduction of tampons was continued for about ten days longer. The small wounds healed admirably. There was no more pain. She is now pregnant.

221 East Tenth Street.

THE POWER OF SULPHATE OF MAGNESIUM IN CURING CATARRHAL INFLAMMATION OF THE DIGESTIVE TRACK.

By S. BRADBURY, M.D.,

OLDTOWN, ME.

Thirty years ago I was treating an infant, aged eighteen months, that had dysentery. My treatment was strictly according to the medical works of the time, but the child did not improve. I treated it about two weeks, when the mother, as well as myself, got disgusted, and she called in a quack, who treated it about a week, when the mother again called me to attend the patient. I found it worse than ever, having bloody, slimy discharges every twenty minutes. A good angel told me to give the child a big dose of "salts." I did to the extent of a heaping teaspoonful. I trembled as to the result, as the patient was very weak, but seeing the mother a few hours after the medicine was given, she told me the child was white as a sheet when the medicine operated, but had had no more bloody discharges since then. In fact, this one dose of sulphate of magnesium cured the infant, so it was not necessary to give anything more whatever in the way of drugs.

When travelling in Palestine, in 1870, one of our party, Mr. C——, of New York, was laid up several days in Jerusalem with dysentery. He was so sick that he could not go with us to Tiberias. Before leaving him I went into an Arab drug store and asked for a quarter of a pound of sulphate of magnesia, got it, and gave the patient a very large dose, that is, as much as I could get on to a great spoon twice, to be repeated every day until the disease was cured. On my return to Jerusalem, a week or more afterward, the patient told me the medicine I gave him very soon cured him, and that he was as well as ever

About fifteen years ago I was taken with severe inflammation of the three inner coats of the small intestines, viz., mucous, areolar, and muscular; for I had frequent violent griping pains, with bloody and slimy discharges, evidently coming from the small intestines. I commenced treatment with a cupful of clear salts dissolved in water, which operated in about an hour, but this dose did not give the perfect relief that I expected. I therefore took half a pint more of clear salts dissolved in water, one hour from the first dose. This last dose wiped away the inflammation as if by magic when it operated, and left not a trace behind.

Ten years ago, coming home from a journey, I found an old patient of mine who had been laid up several weeks with severe inflammation of the stomach, to wit, gastritis, the peritoneum not being involved. She had been attended by a homœopath for a week or more, with no benefit. I immediately gave her a very large dose of salts, the exact amount I have forgotten, but the patient was up in three days doing her work.

I have thus given three cases of inflammation of the three innermost coats of the large and small intestines, and also of the stomach, to show the power of salts to cure. The infant cure first mentioned opened my eyes very wide to the great value of sulphate of magnesium in catarrhal inflammation of the stomach and bowels, and I could fill many pages of your journal in giving instances of cases cured by it. Whether this medicine is adapted to the treatment of peritonitis I do not know, as I never dared to use it in this disease, but I notice a Liverpool physician, Dr. Hunt, speaks very highly of it here too.

Now, one word in regard to the dose of sulphate of magnesium in the above cases, and I will close.

I have found, in a large experience in using this salt, that small doses do more harm than good. The smallest dose for an infant should not be less than a heaping teaspoonful, and a great spoonful may be given without harm. The truth is, the greater the dose the less it gripes. In my case above, I took half a pint of clear salts dissolved in water without the slightest griping when operating. This medicine does good in the cases mentioned, evidently by producing a copious discharge from the lining of the digestive track, without having any but the slightest effect upon the muscular coat. It is totally unlike ordinary cathartics, it simply causes the excretion of fluids from the digestive mucous membranes, hence the safety in giving large doses, as the intestinal muscles are not acted upon by them.

AN UNUSUAL CASE OF PNEUMOTHORAX.

By FRANK H. MURDOCH, M.D.,

PITTSBURG, PA.

On Monday, March 28, 1892, I was called to see a patient with the following history:

Miss D——, aged fifteen, who had always enjoyed good health and whose family history was good, had, during the night, suffered from a quite severe pain in her left side. At the time of my visit the pain had disappeared, and I could discover nothing wrong about the chest excepting an exceedingly tender spot as large as the hand below the left scapula.

On Tuesday I did not see her. On Wednesday, while being raised in bed, pressure was accidentally made on the tender spot in the back, and she was immediately seized with a severe paroxysm of coughing, which lasted ten minutes, and which completely exhausted her. I saw her soon after the attack and found her lying quietly in bed, apparently perfectly comfortable. Her pulse was 110, her temperature 100½° F., and her respirations 22. There was no pain or dyspnœa.

Examination showed that over the whole of the left chest, excepting near the spinal column, there was absence of vocal fremitus, hyper-resonance on percussion, with metallic voice and metallic tinkling on auscultation. The heart was so much displaced that the valve-sounds could be distinctly heard only to the right of the sternum. The treatment consisted in regulating her diet and keeping her quiet in bed. In four weeks the air had disappeared from the pleural cavity and the heart had resumed its normal position. The lungs were left none the worse for the attack.

The points of special interest in this case are, first, what caused the rupture of the pleura, and second, air having entered the pleural cavity, why was there no dyspnœa? That the severe paroxysm of coughing was the immediate cause of the rupture of the pleura there can be no doubt, although in the absence of tubercular disease of the lungs there was no good reason why the pleura should have ruptured from so slight a cause. The entire absence of dyspnœa is also not easily accounted for, and is entirely unusual.

Fraentzel[1] writing on this subject says: "In a not inconsiderable number of cases there is no dyspnœa, but these are always in very debilitated individuals generally suffering from advanced phthisis."

Allbutt[2] says: "In those rare cases in which pneumothorax comes on apparently as a primary disease, that is, in which the entrance of air into the pleural cavity is obscure, we find the chief symptoms to be dyspnœa and a sense of faintness."

Had the pneumothorax been limited by old, strong ad-

[1] Ziemssen's Cyclopædia, vol. iv., p. 755.
[2] Quain's Dictionary of Medicine, p. 1225.

hesions, there might have been but slight pain and no dyspnœa,[1] but in that case there would have been only partial dilatation of the chest, and the heart would not have been displaced.[2] In looking up the subject I can find reports of but two similar cases. One is by Fraentzel [3] and the other by Symonds.[4] Both patients were healthy men. One man was rolling a heavy barrel at the time of the attack, and the other was working inside a fire box. Both experienced great dyspnœa, and both made good recoveries, one in six weeks and the other in two months, without any pathological changes having taken place in the lungs.

It would seem, therefore, that when rupture of the pleura occurs in apparently healthy individuals, the opening soon closes, while in cases of pneumothorax, the result of tubercular disease of the lungs, the perforation is very likely to remain open to the end of life.[5]

ABSOLUTE REST OF THE PARTS THE BEST TREATMENT FOR LESIONS OF THE VOCAL CORDS.

By JOHN TRAILL GREEN, A.M., M.D.,

TUCSON, ARIZ. TER.

The varied experiences of four years in a well known health-resort for lung and throat troubles have convinced the writer of the assertion conveyed in the title to this article: "If any lesions of the vocal cords or adjacent parts of the larynx are discovered, absolute rest of the parts is the best treatment." Certainly not to the exclusion of other remedies, well known and proved to be potent, but to be insisted on, no matter what be the medicinal treatment or the climatic surroundings. Anyone who has closely watched such cases has observed the dry, hacking, laryngeal cough that is sure to follow over-use, or indeed any use of the voice, be it singing, loud talking, or only whispering. Some patients, and, in fact, some prominent physicians, have an idea that what is called "whispering" does not irritate the cords, and may be allowed. If one watches a patient closely he will soon see that the so-called whispering (especially when trying to make the sound carry some distance) is even more of a strain than the use of the voice at its natural tones. And it will also be noted that the same short, dry, laryngeal cough is almost invariably brought on. Again, if we examine a larynx after the patient has over exerted the cords by the so-called social or domestic duties that invalids insist must be carried out, we are sure to find any ulcers irritated, any congestion worse, and patients themselves can easily feel the increased pain. It is certainly not pleasant to give up the use of one's voice, but could we make patients fully understand their condition, and the value of such a procedure, they would soon agree with us. What does one year's talking amount to compared to fifty or sixty of future life and usefulness if a cure can really be accomplished? With the fewest possible exceptions such patients are young—under thirty—and have the best part of their life before them. Only within the last year the writer has tried to impress upon at least twenty patients the value of absolute dumbness. Success has been obtained completely in only one case, and with results that put the others to shame for the lack of will-power to stop talking. True, many others have come near the mark, but will keep up more or less useless irritation. One great difficulty is the extreme sensitiveness to being thought an invalid; when, as a matter of fact, no one cares to disguise such a fact from their friends, why should they care for the stranger? In reality, does any invalid disguise his or her condition from an observant person? The writer has never happened to see this absolute rest so strongly insisted on before, and wishes to emphasize its benefit to the profession. Point out the necessity to each patient and appeal to their will-power to help you, but especially to help them. In conclusion, it may be added that one patient out of the twenty who had the nerve to stick to his conviction of the benefit of this rest was a physician in active practice, who carried on his professional work by means of slate and pencil. His experience as to the relief of pain, the cessation of cough, and the general improvement of vitality are enough to convince one of the utility of the treatment. If the idea is of any use, it is much more so as the first symptoms appear. Let us make it an axiom in every case of laryngeal trouble, however slight, to insist on "absolute non-use of the voice."

[1] Pepper's System of Medicine, vol. iii., p. 578.
[2] Ziemssen's Cyclopædia, vol iv., p. 754.
[3] Ibid., p. 746.
[4] MEDICAL RECORD, January 16, 1886, p. 67.
[5] Gairdner: International Clinics, April, 1891, p. 73.

A CASE OF MALIGNANT TUMOR OF THE FEMUR IN A BOY AGED THIRTEEN YEARS, OCCURRING IN THE PRACTICE OF E. J. SMITH, M.D.

REPORTED BY F. OVERHOLT, M.D.,

HARLAN, IA.

C. N——, while riding horseback in Idaho, in August, 1891, struck his knee against a sapling, but no symptoms followed at the time.

Dr. Smith first saw the case on November 22, 1891. It had then all the appearances of a simple synovitis, which was controlled by extension and application of hot water. Four weeks later it began to swell above the knee, the swelling being accompanied by pain, and subsiding at times.

On January 1, 1892, fluctuation became so apparent that an incision was made into the joint at the lower edge of the tumor, to the outer side of the patella. No pus was found, but there was very severe pain now all the time. Next week the joint was opened again on the other side, higher up. No pus, but some broken down tissue was discovered. On January 11, 1892, the patient had a chill, and the following day Dr. Smith, assisted by Dr. E. B. Moore and myself, performed circular amputation in the upper third, in what appeared to be healthy tissue, muscle and bone seeming all right.

The operation was finished hurriedly on account of shock, and the patient was put to bed, surrounded by hot bottles. He did not rally well, and did not regain complete consciousness till the next morning. At 6 P.M. the temperature was 104° F.; at 12 midnight, between 105° and 106° F. The following morning the temperature was 99°, and from this on stayed below 100° F., and the patient's general health improved slightly.

We had four inches of flap after the leg was off, yet two weeks after the bone emerged from the stump in spite of adhesive straps, etc. The fatty tissue to be spoken of later broke down and came away, which in a measure accounted for the retraction. Later, healthy granulations sprang up and covered the bone, and we were in hopes the boy would get well; but by February 20, 1892, there was well-marked return of the disease in the stump. The growth extended up into the abdomen, as well as increasing the size of the stump, until, when the patient died, on March 10th, it measured twenty-three inches in circumference.

The features of interest in the case to us are: 1. The rapid growth. 2. A deposit of very yellow fat, half an inch thick over the whole leg, although the other leg or thigh was so thin that one could reach around it with the hand. This fat broke down and came away from the stump. 3. The cartilage of the articular facets of the femur and tibia seemed sound, although just above the condyles of the femur a scalpel could be easily run through what was left of the bone. 4. The entire tumor was black and gangrenous when removed.

The Danger of being a Good Samaritan.—A French court has decided that the person who summons a physician to see a sick person is responsible for the payment of his fees.

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SEXUAL BRAIN DIFFERENCES AND HIGH-SCHOOL EDUCATION.

EVERY now and then the dangers of educational overpressure are portrayed in more or less vivid colors and set off with sombre statistical backings. Some wholesome truths are no doubt furnished in these jeremiads on modern education; but we believe that these truths should be allowed only their due weight, and should not lead to the conclusions too often drawn, that our methods of training the young are entirely ill-directed and pernicious.

Sir J. Crichton Browne is the latest of the alarmists, and he starts well back in his argument by adducing facts to show that the female brain is relatively smaller than the male, and that its blood-supply is more richly distributed to the posterior portions and lower levels of the encephalon. Regarding the first point, facts of some interest are cited.

Dr. Browne does not know of any trustworthy standards of the brain-weights of healthy natives of Great Britain, but he gives a table showing the brain-weights of sixteen hundred insane persons, mostly English, which he says is absolutely reliable. This table deserves incorporating here.

Sexes.	Average weight of brain.		Average height.			Excess of male over female brain-weight.		Excess of male brain-weight after allowance for height.	
	Gms.	Ounces.	Metres.	Feet.	Inches.	Gms.	Ounces.	Gms.	Ounces.
945 Males . . .	1350.54	47.64	1.702	5	7	127.68	4.50	29.71	1.05
655 Females . .	1222.86	43.14	1.575	5	2	....	....	....	....

It shows that, after making all allowances, the female brain (of the insane) weighs at least an ounce less than the male. The fact that the brains weighed were those of the insane makes the figures come out rather more favorably to women, in Dr Browne's opinion, since organic disease which causes brain atrophy is much more frequent among insane males. To this, however, it may be said that the observations of Dr. Bra on the weight of the insane brain, show that the sexual differences in mania and melancholia are greater than normal, and that there are decided variations depending upon the form and stage of the insanity. Laufmauer also, who examined and weighed 656 insane brains, found a sexual difference of 153 grammes as against the normal difference of 143 grammes. The conclusion drawn by this writer, as well as by Parchappe and Meynert, is that in insanity the female brain suffers twice as much as the male. We cannot therefore regard Dr. Browne's figures as at all conclusive.

With regard to the relative weight of the healthy female brain, there has been a general agreement among brain anatomists as to its inferiority. Still Bischoff, who has contributed perhaps the most elaborate study of the subject, states that, relative to the body-weight, the female brain is the heavier.

Dr. Browne's next sexual difference in the brain is a more voluminous posterior development. This has been sufficiently proved by facts which he does not seem to be aware of, viz., cranial measurements. The cerebellum and the occipital lobe are both relatively larger in women.

A third sexual difference which Dr. Browne alleges to exist is that of diversity in convolutional arrangement and in weight of the cerebral hemispheres. He thinks that woman's convolutions have a simpler pattern, and that her left brain weighs relatively less as compared with the right. It is generally admitted that in healthy brains there is no essential and permanent difference in weight between the two hemispheres. Hence the sexual differences found by Dr. Browne in the insane can have no value as applied to the healthy. Nor can any be attached to such a general statement as that the convolutional arrangement is simpler in woman. The differences as regards this point in men are very great.

A final point made by Dr. Browne is, that he has found that the internal carotid and vertebral arteries, when measured separately, display a marked difference in calibre in male and female brains respectively. "In ten male brains," says the writer, "of adults free from brain disease, and ranging from twenty-five to thirty-six years of age, the internal carotid arteries had an average diameter of 2.8 millimetres on the right side and 2.75 millimetres on the left side; while the vertebral arteries had an average diameter of 2.2 millimetres on the right side and 1.875 millimetre on the left side; whereas in ten female brains of adults free from brain disease, and ranging from twenty-five to forty three years of age, the internal carotid arteries had an average diameter of 2.6 millimetres on both sides, while the vertebral arteries had an average diameter of 2.3 millimetres on the right side and of 2.075 millimetres on the left side. It thus appears that the distribution of the blood in the male and female brain, respectively, varies to a considerable extent. The internal carotid arteries, with their great branches—the anterior and middle cerebral arteries supplying the supra-orbital convolutions and island of Reil, the gyrus fornicatus, the Rolandic area, the angular gyrus, and the first temporo-sphenoidal lobule—are much larger, both absolutely and relatively, in the male than in the female brain; but the vertebral arteries which supply the occipital and temporo-sphenoidal lobules are larger in the female than in the male brain, and the basilar artery, which is practically a continuation of the vertebrals, is also larger in the female brain, where its average diameter is 2.8 millimetres, than in the male brain, where its average diameter is 2.675 millimetres."

The above figures, though based on very few observa-

tions, are of interest, and might have been supplemented by the fact that in apes the vertebral nearly equal the internal carotids, while in man they are relatively smaller, so that their union in the basilar makes a single artery about the size of the carotid. On the other hand, what will Sir James do with the fact that in over five per cent. of cases the posterior cerebral arteries come from the carotid?

On the whole, one can hardly say that Dr. Browne has added anything positively new to our knowledge of the sexual differences of the human brain.

It is not denied, however, by anyone that such distinctions exist, and, after all, the important part of the paper is that which deals with the practical question of the education of girls. Dr. Browne attacks the high-school system of England. He asserts that in furnishing a higher education for woman, it hurts her physically and mentally. He finds that in one school, among 187 girls, 137 had headaches. He also shows by statistics how sensitive to morbific influence is the system of the adolescent female.

We cannot venture to criticise the educational methods of English high schools. They may teach wrong things and in a wrong way; but surely any person who denies the usefulness and propriety of giving girls a high education if they want it, is too far lacking in sense to deserve serious consideration. It is quite possible for woman to know something and yet be lovely. If knowledge extinguishes beauty in England, it must be the fault of the method, not of the knowledge. If the high school of England, as Dr. Browne thinks, makes the female leg thin, the bust flat, and the eye myopic, it truly needs reform; but such is not the necessary result, nor have such disastrous illustrations of anatomical astringency befallen the high-school work of America.

TYPHOID FEVER IN CHICAGO.

We printed with great pleasure, a few weeks ago, a letter from Dr. Ingals, of Chicago, in which the writer stated that the sanitary condition of that city was far better than had been represented, and that all danger of contamination of the water-supply would soon be entirely removed. We are sorry now to learn, on the authority of the Chicago *Herald*, that the danger still exists. The city sewers discharge into the Chicago River and the river empties into the lake. The water supplied to the city is drawn from a point in the lake said to be two miles from the shore, but yet in the path of the current from the river, and is directly contaminated by the sewage carried by this current. According to the *Herald*, "forty million gallons of diluted sewage" are added daily to the drinking-water of the city. With a population half a million less than that of New York, the deaths from typhoid fever in Chicago in 1891 were over five times as many as in this city, the figures being 1,997 for Chicago, and 384 for New York.

Such a showing would be disgraceful to the capital of Kurdistan or Mecca, but when we consider that it relates to the second city in America, and to a community that has invited the whole world to visit it next year, it is little short of incredible. If it were not for the World's Fair this matter would be of less interest to the rest of the country. We might look on with wonder that any community could exist in this enlightened age having so little regard for the lives of its members, but we should feel that it was for Chicago to work out its own salvation, and our duty would be ended with a warning to travellers who were not bent on suicide to keep away from the place.

But it is different now. This country has extended an invitation to all the nations of the earth to visit the city by the lake in 1893, and it is as much our duty to protect our guests from pestilence as it is to guard them against the assaults of highwaymen. Chicago, in securing the holding of the Exposition, has assumed responsibilities which the rest of the country must see that it does not shirk, and the chief of these responsibilities is the safeguard of the health of the strangers who are invited to visit it. It would be far better to call a halt at once, revoke all invitations to foreign exhibitors, recall the commissioners who have been sent abroad, and demolish the buildings already erected, rather than expose confiding visitors to the horrors of an epidemic.

It is said that new pumping-works will soon be in operation which will force all the city sewage into the Illinois River, leaving the lake water absolutely pure. It is very evident, however, that those works are not yet in operation, or if they are, that they fall very far short of accomplishing what was expected of them.

It is an unpleasant duty to expose the shame of a city to which the eyes of the whole world are turned, but the matter is one that vitally concerns the honor of our country, and it would be little short of criminal to belittle such a real and present danger. We can but trust that our Chicago friends have a firm foundation for the hopes they continually express of a betterment of the sanitary conditions of their city, and none will be more glad than ourselves to announce that the time has at last come when one can go to Chicago without taking his life in his own hands. May the country not have long to wait before receiving these reassuring tidings.

SCIENCE AND WOMAN.

Professor William James, of Harvard, announces that woman develops early and then ceases to grow mentally. Professor Crichton Browne finds that women's brains are smaller than men's, and their frontal lobes less richly supplied with blood. Professor Lombroso finds that women are less sensitive than men, and, as regards their receptive and perceptive organs, represent an incompletely developed type. Altogether science is bearing down very hard on the ladies. Yet we do not learn that they are becoming any the less popular. The poet has said metrically that without them the extremes of life would be without solace and its middle without joy. The testimony of the poet will probably continue to be received by the mass of humankind, even if the greatest cranial circumference of the gentle sex never rises above fifty centimetres.

The Sultan of Turkey is said to be suffering from pulmonary phthisis. His mother died of the disease, and he developed symptoms of the incipient affection when quite a young man, but was supposed to have been entirely cured.

THE MYSTERY SOLVED.

One of the most difficult things in all this world to explain is individual idiosyncrasy, and we are therefore greatly pleased to inform an expectant world that one mystery of this kind has been satisfactorily cleared up. In a recent note we referred to the strange fact, if fact it be, that Mr. Gladstone chews every bolus of food just thirty-two times, and ventured the query why it should be thirty-two instead of any other number. This has been answered by a number of friends, who say that he makes one masticatory effort for each and every tooth that is, or ought to be, in his head, piously remembering the absent ones and making those that remain do duty for any that may have fallen by the way. This explanation is, we think, satisfactory, and we hope that the Grand Old Man will, for his stomach's sake, continue to make each tooth do its full duty, and not allow his watchfulness to relax in the excitement of reading election returns or when worried by missiles cast at his head by a ribald populace.

AËRONAUTIC CASUALTIES.

Two drowned, two nearly drowned, one with a broken rib and probably internal injuries, and one who was saved from injury or death by falling into a tangle of telegraph wires. That is the, doubtless incomplete, record of accidents to aëronauts on Independence Day. In addition to this, a baby, whose mother was watching the ascension, was nearly decapitated by the rope dangling from a rising balloon. The impatient, whose ears were tickled last summer about twice a week with the dull thud of some balloonatic striking the earth, may think this is a small number, but they must make due allowance for the fact that it is only the beginning of the season, and that the parachute fiend has not yet commenced to tumble. The latter will begin soon, no doubt, for it is too much to believe that all of his race were killed off last year, and each one as he falls will contribute his mite toward the raising of the mortality list.

News of the Week.

City Hospital, Blackwell's Island, New York.—Dr. Frederick H. Wiggin has been appointed a member of the Medical Board of the City Hospital, Blackwell's Island, *vice* Dr. Ferguson, resigned.

The Micro-organisms of Cancer.—In an article on cancer of the pancreas, Dr. Simon Flexner (*Johns Hopkins Bulletin*) describes the results of his investigation of the so-called organisms or "coccidia" of cancer. He concludes: "We have no difficulty in reconciling the appearances which we have described with those of many writers on the psorospermic origin of cancer and some other affections. Indeed, it is even possible to see in the variety of form and number some of the stages of development which they have depicted. We do not, however, regard these bodies as organisms, but rather interpret them as being degenerations occurring in cells and nuclei, affecting, as a rule, not the whole of these, but circumscribed portions. The observed differences in density, granulation, and homogeneity may, perhaps, be accounted for on the supposition that they depend upon different degrees of one process, or represent different ages. The presence of stained particles within many of them, however, is not so easily understood in those instances where the nuclei of the cells are intact. It may be well to suggest the possibility of their being leucocytes which have wandered into the necrotic parts of cells, as leucocytes are known to enter dead cells in other cases. Some of the stained particles suggest the nuclei of polynuclear leucocytes, while in other cases it is possible to see in the irregular particles what correspond to fragments of nuclei, probably derived from those leucocytes which have perished after having entered the degenerated bodies."

Pilocarpine Hydrochlorate hypodermically, conjoined with the internal use of camphor, is reported to have excellent results in *status epilepticus*.

Ammonium Benzoate, in 5 to 15 grain doses is considered by Dr. Steer about the most satisfactory medicament in cystitis.

The Local Examination of Unmarried Women.—Commenting favorably on the excellent article of Dr. Coe (*Med. and Surg. Reporter*), the editor of *Gaillard's Medical Journal* says: "In the discussion of a recent able paper of Dr. A. Jacobus on amenorrhœa before the Northwestern Medical and Surgical Society, the consensus of opinion seemed to be that local treatment was unavailing in most cases, and several able observers inveighed against the too common practice of vaginal examination of young girls. The writer's personal observation may serve to enforce this view. He has occasion to treat a large number of young lady teachers. Recently two of these have consulted him who have been treated by 'lady physicians.' It appears from their statement that many of their friends have been subjected like themselves to tri-weekly applications of tampons, iodine, pessaries, etc. In both cases there was no organic disease requiring local treatment. One had become a utero-maniac, whose chief symptom was vomiting and loss of appetite. Placing her under strict surveillance in the hospital and giving her daily cold ablutions, with tonics and absolute abstention from local treatment, restored the stomach. She gained flesh and went to work. But her utero-mania had been so firmly established that she applied at a dispensary, where the young gynecologists treat her anteflexure secundem artem (?). The other case was found to be suffering from constipative anæmia and neurasthenia. Being a woman of great will power she has abandoned all thought of local treatment, and is now gaining health and strength under the rain-bath, and daily ablutions, aloes and mast pills, and good diet. It is our duty to save these young girls the mortification and annoyance, and absolute injury of a vaginal examination unless found absolutely necessary, after failure of other treatment. To our colleagues of the gentler sex this duty is quite as imperative, and their attention to it is the more necessary, since they may regard the moral effect less pronounced, and many of them deem themselves specially adapted to this class of practice among young women."

Incompatibles of Antipyrin.—The *Pharmaceutische Centralblatt*, No. 29, 1892, gives the following incompatibles of antipyrin which precipitate the antipyrin from a

concentrated solution: 1, Concentrated solution of carbolic acid; 2, tannic acid, and preparations containing it; 3, tincture of iodine; 4, the chlorides of mercury. The following substances also decompose antipyrin when triturated with it: 1, Calomel forms with antipyrin a toxic combination; 2, antipyrin is decomposed when rubbed with beta-naphthol; 3, with chloral antipyrin forms an oleaginous liquid; 4, with bicarbonate of sodium it disengages the odor of ether; 5, salicylate of sodium, equal parts with antipyrin, forms an oleaginous mixture.

A Post-Graduate Hospital and College has been organized at Albany, N. Y. It is to be called the Sydenham Post-Graduate Course and Hospital.

The Annual Address in Medicine before the Medical Faculty of Yale University was delivered by Dr. George M. Sternberg, U.S.A., on the "Etiology of the Infectious Diseases, and the Explanation of Acquired Immunity from these Diseases," in Battell Chapel, New Haven, Conn., on Tuesday, June 28th.

Dr. George W. Jarman has been appointed Obstetric Surgeon to the New York Maternity Hospital, to fill the vacancy created by the resignation of Dr. H. J. Garrigues, who has been made Consulting Surgeon.

The Paterson General Hospital.—The new building of this institution was opened for the inspection of the public on Saturday, June 18th. The dedicatory services were held in the afternoon of that day.

Scarlet Fever in London.—The cable reports that scarlatina is more than usually prevalent in London, the hospitals which can receive cases of that nature being so overcrowded that temporary huts are being erected for the accommodation of patients. About two thousand five hundred cases were under treatment in hospital on July 1st, and the number of children under treatment in their homes was also very large.

Dr. James S. Green, of Elizabeth, N. J., died at his home on July 2d, of heart disease. He was born at Princeton in 1829, and was educated in medicine in Philadelphia. He had resided in Elizabeth since 1853.

Dr. W. B. Green was killed at Long Branch on July 1st. He was crossing the railroad track and was struck by the locomotive of a passing train and instantly killed. It was raining heavily and Dr. Green was carrying an umbrella in such a way that he could not see the approaching train.

The Cholera is advancing from Central Asia into Europe. It has entered Russia at Baku on the Caspian Sea, and has travelled eastward as far as Tiflis. Passengers from Central Asia on the Trans-Caucasian railway are quarantined for three days near Baku and forced, much against their will, to take a bath and change their clothing. The transportation of freight on the railway has been forbidden, and all food brought into the country is carefully inspected. The disease has appeared also at Astrakhan, and thence ascended the Volga to Saratov. The latter city is on the direct line of the trade route between Asiatic Russia and Moscow, and it is feared that nothing can prevent the epidemic invading this city in the very centre of the empire. The Russian authorities are reported to be doing the best they can to keep the disease back, and to enforce the observance of sanitary laws. Cholera has also appeared in Italy, five cases being reported at Brindisi, the terminus for most of the steamers plying between the Levant and Europe. A cablegram from Paris, dated July 6th, reports that there were twelve deaths from "cholerine" in the various suburbs of that city on Tuesday.

The Late Dr. Birdsall.—At a meeting of the Lenox Medical and Surgical Society, held on June 20th, the following preamble and resolutions were adopted:

Whereas, This society has in the death of Dr. W. R. Birdsall sustained the loss of a most valued member; therefore,

Be it resolved, That the Society express the profound sense of bereavement which it has sustained, and that its sympathy and condolence be extended to the family of the deceased.

Resolved, That a copy of these resolutions be furnished the MEDICAL RECORD and the *New York Medical Journal* for publication.

Signed, J. LEE MORRILL, M.D.; S. S. JONES, M.D.; J. BLAKE WHITE, M.D.

Increase in Number of Physicians in New York.—*The Medical Register* for 1892 contains the names of 6,651 physicians practising in New York City and State, as against 6,268 one year ago. In this city the list includes 2,435, as against 2,328 in 1891. Besides this registered number, it is stated that there are about 870 physicians practising more or less irregularly, of whom over 100 are known to be advertisers. The total number of physicians in New York must be about 3,300, and in Brooklyn about 1,000. This gives one physician to 500 population in New York, and one to 900 in Brooklyn. The relative number of physicians throughout the State is less than in the large cities. Attention is called to the fact of the large increase in the number of dispensary patients of late years. In 1891–92 there were 442,000 cases treated gratuitously, or nearly one third of the population. We observe that the editor of the *Register* continues to omit from the list of physicians prominent and reputable men who are members of the New York Academy of Medicine.

The Langenbeck House, which is the name of the new medical building at Berlin, was recently opened with appropriate ceremonies. It contains a lecture theatre with seven hundred seats, where Siemering's bust of Langenbeck is to be placed, a room for meetings arranged for several hundred persons, a fine reading-room, an elegant *foyer*, which is to be ornamented by the bust of the late Empress Augusta (the gift of the Emperor), and by life-size portraits of the present Emperor and Empress; rooms for scientific collections, etc. The entire cost of the building, including site, has been 550,000 marks (£27,500). The *Deutsche Medizinische Wochenschrift* has published a special surgical number in honor of the inauguration of the Langenbeckhaus. Among the contributors are Czerny (Heidelberg), Trendelenburg (Bonn), Schede (Hamburg), Kümmel (Hamburg), and their papers are followed by reports from the surgical clinics of Berlin, Marburg, and Kiel.

Society Reports.

NEW YORK STATE MEDICAL ASSOCIATION, FIFTH DISTRICT BRANCH.

Eighth Annual Meeting, held in Brooklyn, May 24, 1892.

In the absence of the President (Dr. Henry Van Hoevenberg, of Kingston, Ulster Co.), Dr. William T. White, the New York County representative on the Executive Committee, occupied the chair. At the morning session a biographical sketch of the late Dr. Lucius Damainville, written by Dr. Austin Flint, was read by the Secretary, Dr. E. H. Squibb, of Brooklyn, and a sketch of the late Dr. David Matthews by Dr. S. B. W. McLeod.

Therapeutic Efficacy of Saratoga Waters.—Dr. T. Herring Burchard then read an exhaustive paper on this subject. He stated that it represented an experience extending over sixteen years and many hundreds of cases. The paper was devoted to the consideration of these principal points: 1, The real merit of the waters as indicated by their chemical properties and physiological effects; 2, the relative value of the principal springs in different classes of affections; and 3, their practical utility in the treatment of disease. The greatest misfortune from which Saratoga suffered, he said, was an embarrassment of riches, the great number of its springs and the great variety of their chemical composition. The Congress, Hathorn, Geyser, and other springs furnished ideal saline cathartic waters. One notable characteristic of the Saratoga waters was the large amount of carbonic acid gas they contained, especially when they were compared with the famous mineral waters of Europe. The two most prominent alkaline waters were the Saratoga Vichy and the Saratoga Carlsbad. While the French Vichy was more alkaline, the Saratoga was superior on account of the character of its constituents. It was much richer in lithiates of calcium and magnesium, while the quantity of carbonate of lime was remarkable. Hence it was a very valuable agent in the treatment of lithiasis, gout, rheumatism, etc.

The ferruginous waters, like the Columbian and Washington, produced remarkable effects in chlorosis and anæmia, and it was certainly astonishing that the comparatively small amount of iron which they contained should accomplish such satisfactory results. But as the iron was in combination with alkalies and carbonic acid gas it was immediately absorbed, and produced effects in the system which could not be obtained by large doses of ferruginous drugs. Some years ago the late Dr. Thomas McBride and himself undertook a series of experiments which fully demonstrated this. Two classes of subjects were selected, the first in robust health and the second suffering from well-marked anæmia, and careful records were kept of the general condition, the microscopical examination of the blood, and the sphygmographic tracing in each individual. For a certain definite period tincture of the chloride of iron was administered regularly to all the subjects, with the result of producing no effect upon the healthy subjects and only a very moderate improvement in the anæmic ones. Then the water of the Columbian Spring was substituted for this, and it produced such constant and severe headache in the healthy individuals that it soon had to be discontinued, while in the anæmic ones there resulted a much more marked improvement. With the sulphur waters of Saratoga he had never noticed any appreciable results, and the same was true of its so called alterant waters; but with the Hathorn water, given hot (and often in hot milk), especially when an iron water was used at the same time, he had seen remarkable alterant effects produced, and found the treatment very successful in scrofula, rachitis, etc.

It had often been contended that the efficiency claimed for mineral waters was generally due to the regulated diet and habits of life prescribed for patients undergoing such treatment; but he believed that while the enforced regimen undoubtedly had much to do with the beneficial results noted, the waters themselves, when given with discrimination, had a distinctly remedial effect. Such waters as the Congress, for instance, acted in the first place in a mechanical way, stimulating all the secretions of the abdominal viscera, and secondly by causing vital changes, increasing metabolism and eliminating effete material. In dyspepsia depending on gastric or intestinal catarrh, or on hepatic derangement, and in nephritis and obesity, he had some excellent results produced. The Hathorn was a stronger water, and was especially indicated in lithiasis, oxaluria, biliary concretions, and chronic fecal poisoning. In conclusion Dr. Burchard spoke of the unfortunate lack of proper bathing facilities at Saratoga, and stated that in the coming season this would be, to some extent at least, remedied.

The Limitations for Vaginal Hysterectomy in Malignant Disease of the Uterus.—The first paper of the afternoon session was one by Dr. Joseph E. Janvrin on this subject. (See page 29.)

Dr. George T. Harrison, opening the discussion, said: It scarcely admits of doubt now, in the light of the results obtained by operators, especially in Germany, that carcinoma of the uterus, which most commonly gives the indication for the performance of a kolpo-hysterectomy, may be cured, provided the operation is performed at a comparatively early period of the disease. According to recent statistics ten to fifteen per cent. remained free from a return of the disease eight or nine years after the operation. It is pertinent to ask how many of those who succumbed might have been saved if the operation had been performed in time. It is absolutely certain that a large percentage might have been permanently cured. It may be said, therefore, that the question of the curability of cancer resolves itself into an early and accurate diagnosis of the disease. A closely related question is the all-important one which Dr. Janvrin has so ably discussed in the paper he has just read, *i.e.*, the limitations of the operation. Schauta, who has lately studied this subject very thoroughly, gives what he terms a lower and an upper limit of the indications to total extirpation. The upper limit of the indication to total extirpation in carcinoma is present in every case, no matter whether carcinoma of portio, cervix, or corpus, as soon as the neoplasm is susceptible of diagnosis. The lower limit of indication of the vaginal extirpation in carcinoma, according to this authority, is present when the disease has spread into the depth of the tissues to such an extent that operation is no more practicable. Superficial spread he does not regard as contra-indicating the operation. Partial amputations are to be rejected in cases which are amenable to a radical operation. In practice the most important point to decide is, whether the pelvic connective tissue is still free. On the determination of this hinges the question of the practicability of the radical operation. And here great difficulties are often encountered. Anæsthesia under these circumstances may aid us vastly. If the uterus is freely movable, the cervix not too much enlarged, and no suspicious infiltrations are felt, the prospect of a successful issue is excellent. On the other hand, if the uterus is fixed and the parametrium is the seat of hard nodular infiltrations, a radical operative procedure is certainly contra-indicated.

According to the views of Schroeder, which were assuredly correct, a very large cervix contra-indicates the radical operation, because the extraordinary size is due not only to enlargement of the cervix, but also denotes disease of the adjacent connective tissue. It must be borne in mind, however, that a certain degree of mobility may exist in cases which do not admit of operation, for here an infiltration may exist on one side of the parametrium and the uterus may rotate around this as an axis. A certain degree of mobility may also be found in the uterus, in cases in which the carcinoma has extended to

[1] Archiv. für Gynäkologie, Bd. xxxix., Hft. 1.

the bladder or the connective tissue between bladder and uterus, and left the broad ligaments free. If mobility alone, therefore, does not indicate an operation, so, on the other hand, fixation of a greater or less degree does not necessarily contra-indicate the operative procedure under discussion. The diminished or suspended mobility may not only be caused by the extension of the carcinoma to the neighboring parts but may also be due to old inflammatory processes, especially to adhesive perimetritis. If the parametrium in the vicinity of the uterus is free and abnormal thickenings are found in the region of the tubes and ovaries, if we feel the fixed ovary in them, or if we find this condition in Douglas's cul de sac, we may safely infer that we have simply to deal with inflammatory processes. If, on the other side, a number of irregular swellings are found laterally close to the cervix, or if a number of small nodules, like a string of pearls, are found in the folds of Douglas, the dissemination of the carcinomatous process scarce admits of doubt. It deserves mention that in the determination of the question of the mobility of the uterus, the knee-chest position of the patient offers frequently great facilities.

Dr. A. J. C. Skene sent a communication in which he said that within certain limits, vaginal hysterectomy was the best operation that could be performed. (See page 30.)

Retention of Menstrual Blood in Imperfect Hymen.—Dr. J. R. Vanderveer read a paper on this subject. He related a case which was characterized by increasing dysuria, aggravated at the menstrual periods, and spoke of the importance of early recognition and prompt treatment of this condition.

Dr. Harrison said that the higher up the atresia was situated, the greater the danger in rapid evacuation. When it was high, rapid evacuation might have the effect of loosening the distended Fallopian tube from its attachments, with the result of causing it to burst, and thus give rise to peritonitis. This was doubtless the reason why this procedure was formerly considered so dangerous. In ordinary cases, however, there was no danger in rapid evacuation.

Dr. Burchard related a case in which a young woman menstruated regularly through the rectum, in consequence of the results of diphtheria when she was six years of age, which attacked the genitals and produced atresia of the vagina with ulceration, resulting in a large fistula in the recto-vaginal septum

Brown Séquard's Paralysis Resulting from Syphilis.—Dr. S. T. Armstrong read a paper on this subject, in which he reported a case of this kind, and spoke of the importance of adopting anti syphilitic treatment in doubtful cases of paraplegia.

The Latest Thing in Suicides.—Novelties in the suicide business have been plentiful enough of late. High jumps, ropes, pistols, poisons, and holes in the water will soon be out of fashion. Marguerite Borel has just introduced a new style, *fin de siècle* beyond a doubt. Her faithless lover, Paul Convert, deserted her. Marguerite didn't want to live, so she purchased in different drug stores an immense stock of leeches. Then she went home to her nice little apartments in Boulevard de la Villette, Paris, where she undressed, liberated the leeches, and applied them all over her body. In other words, she modestly made an overcoat of them. Next morning she was found still alive and taken to the Lariboisière Hospital, where she died.—*The Sun.*

Mercurials in Influenza.—In a paper on influenza read at the recent meeting of the American Medical Association, Dr. Hemenway stated that he rarely had occasion to see a patient twice if he had given a large dose of calomel at the start. This was also the experience of Dr. F. Peyre Porcher, of Charleston, who wrote in an article in this journal that he never visited a patient more than four days after having given a mercurial and rhubarb purge at the beginning, as in yellow fever.

NEW YORK PATHOLOGICAL SOCIETY.

Anniversary Meeting, January 13, 1892.

H. P. Loomis, M.D., Vice President, in the Chair.

A New Material for Models.—Dr George C. Freeborn presented specimens illustrating their use. For purposes of instruction models are often very useful, but as usually made they only present three dimensions, length, breadth, and thickness. In many cases it is desirable to illustrate some of the physical properties of the object, *e.g.*, flexibility and elasticity, these properties being especially useful in models of some of the histological elements. With the mass to be described these two important properties have been gained.

The mass used in making these models is a mixture of glue and glycerine, or of gelatine and glycerine, the former being more economical and giving an opaque model, and the latter yielding a transparent model. The proportion of the ingredients varies according as a more or less flexible mass is wanted. A mixture of equal parts of glue or gelatine, by weight, and glycerine, makes a firm, fairly flexible mass. By increasing the quantity of glycerine to two or three parts, a less firm but more flexible and elastic mass is obtained. In the author's experience, the most useful proportions are one of glue or gelatine and two of glycerine.

In making the mass the glue or gelatine is soaked in water until it has become soft, then all the surplus water is drained off and the soft mass added to the glycerine which has been heated on a water-bath. When the glue or gelatine has become melted, the thick, tenacious mixture is strained through cheese-cloth, and again heated on the water-bath for at least an hour to drive off the water. If this is not done, the evaporation of the water, after the model is cast, causes considerable shrinkage.

Any desired color can be given the mass by adding to it, while melted, a concentrated solution in water of an aniline dye. Care must be taken not to add an excess, or it will cause staining of the hands upon handling the model.

Making the Model.—He had found paraffine the most useful material for making the model from which the plaster mould is made. Other materials, such as wood or clay, may be used, but paraffine is preferable on account of the ease with which it can be melted out of the mould without damaging it. The paraffine is cast in a block or slab, in a wooden frame placed on a smooth level surface. When cold, the wooden frame is removed, and the block is ready for shaping into the model. In casting slabs, the melted paraffine is run into tin trays of the desired size and depth.

The outline of the model to be made is drawn on thick brown paper, and cut out with a sharp knife or scissors, and is then placed on the slab of paraffine as soon as it has become solid, but while still plastic. With a thin and narrow knife blade, the edges of the paper pattern are followed around, carrying the point of the knife down to the bottom of the tray. This cuts away all the surplus paraffine, which can then be pulled out of the tray. The outline model is now allowed to become perfectly hard before it is removed from the tray. The model is next brought roughly into shape by shaving with a sharp knife, still further smoothed by gentle scraping with glass, and finally finished by rubbing with bits of cloth moistened with turpentine. The model is always made in two parts, and a mould made of each.

Making the Mould.—The model is placed on a well-oiled, smooth surface, the plane side of the model down, and a frame built around it with strips of wood. Plaster of Paris mixed into a cream with water is then poured into this frame until the highest point of the model is covered to the depth of at least an inch. After this has set, the frame is removed, and the mould stood up in a tray. The model is melted out by allowing the flame of a Bunsen burner to play against it, after which it is given three coats

of shellac varnish, each coat being allowed to dry thoroughly before applying the next.

Casting the Model.—Both halves of the mould are placed in a perfectly level position and the surfaces and depressions well oiled. Each half is now filled with the melted mass until it projects slightly above the surface of the mould, using the mass at as low a temperature as possible, in order to avoid contraction of the model on cooling. When perfectly cold, the two halves are joined in the following manner: Remove one half of the model from its mould, then paint the exposed surface of the second half, still in its mould, with some of the modelling mass at a fairly high temperature; next place the other half on it, and adjust its edges to the half contained in the mould. After two or three hours remove the complete model from the mould, cut away all rough spots at the line of junction, and finally finish by painting with a brush wet with boiling water.

All finished models should be preserved in their moulds, to avoid distortion. The mass is likely to prove useful in making casts of irregular surfaces and cavities, as on account of its flexibility it can be easily removed without damaging the object, when a plaster cast would either break the object or be broken itself. To illustrate this adaptation of the process, Dr. Freeborn exhibited a case of the base of the human skull. He also presented models of a red blood-cell, from the human subject, and also from the frog, a crenated blood cell, and several nerve cells.

Dr. H. P. Loomis asked if these models were durable, as he had seen some which had been made by a similar method, which had become very hard in the course of a year.

Dr. Freeborn replied that some of the models which he had presented had been made a much longer time, and were as soft and flexible as when first made.

Abnormal Origin of the Coronary Artery.—Dr. Warren Coleman presented two specimens of this condition. In one it was located one-half inch, and in the other one fourth of an inch, above the free margin of the semilunar valve when pressed back against the vessel. With regard to the coronary circulation, it had long been held that the semilunar valves were pressed back during systole against the orifice of the coronary artery, thus preventing the entrance of the blood into this artery; while during diastole, as a result of the elastic recoil of the aorta and the reflux of the blood, the valves were forced into position. This has usually been accepted as the explanation of the mechanism of the coronary circulation, but it was manifest from the specimens just presented, that in these cases the coronary arteries must have become filled, like the systemic arteries during the systole of the heart. In this connection it is interesting to recall some experiments made a few years ago by Dr. Newell Martin, of the Johns Hopkins University. By means of specially-devised apparatus, and the use of defibrinated blood, or normal salt solution, circulating through a mammalian heart after its removal from the animal, he had been able to prove that the systemic pulse and the coronary pulse were synchronous. Even when the coronary valves were hooked back so as to destroy their action, this synchronism was not affected. Again, it is to be remembered that in aortic stenosis, although the valves are not thrown back, the coronary circulation is fairly well maintained.

Dr. H. P. Loomis remarked that if records were kept of all these cases, he thought it would be found that this situation of the coronary arteries was not uncommon.

Occlusion of the Right Ureter—Cystic Degeneration of the Left Kidney—Abundant Excretion of Urine.—Dr. Coleman also presented a specimen of carcinoma of the uterus which had just been removed from a patient in the New York Cancer Hospital. The posterior wall of the bladder had become adherent to the uterus in such a way as to occlude the lower part of the right ureter, and as a result this ureter and the pelvis of the right kidney were greatly dilated. The left kidney had been converted into a large cyst, and yet, strangely enough, the excretion of urine, which had been quite abundant during life, must have been carried on by the remains of this kidney, as the function of the other had been entirely destroyed.

Various Congenital Malformations.—Dr. J. S. Thacher presented the body of an infant, aged eleven days, which exhibited the following malformations: A large spina bifida; a double talipes equino varus, an absence of the thumb on one hand, and apparently of the radius on this side; and a blending together of the two kidneys into one with a single ureter, and a single opening into the bladder. The child had been in the Presbyterian Hospital, and had seemed well up to a few hours before death, when it refused food and failed rapidly. As no history was obtainable, he was unable to say whether or not this large spina bifida had presented any special obstacle to delivery. On dissecting this tumor, its walls were found to consist of skin and subcutaneous tissue, and the expansions of the dura and pia mater, which were all blended together, except near the pedicle, where there was some separation of the dura and pia. The fluid contained in the meningocele amounted to 560 c.c. Nothing resembling the cauda equina was found, but the nerve fibres appeared to be spread out upon the walls of the sac.

Photo-micrographs of the Filaria Sanguinis Hominis, and of an Undescribed Colony of Bacteria.—Dr. J. M. Byron presented cases of the above. The photograph of the filaria was taken instantaneously, and was an excellent reproduction of one of the specimens recently presented to the Society. The colony represented in the second photograph was remarkable in consisting of a number of mathematically perfect concentric circles, presenting five or six different colors. Nothing more had been learned as yet of the characteristics of the undescribed bacillus which forms this peculiar colony, than that it was a bi-polar bacillus of very small dimensions.

Ganglionic Neuroma of the Supra-renal Capsules.—Dr. R. G. Freeman presented gross and microscopical specimens which had been removed from a little girl of five years, who had suddenly died after an operation on the hip-joint. At the autopsy the lungs showed a beginning broncho-pneumonia, considerable anthracosis, and one bronchial gland, which was cheesy and calcareous. The tumor, which was hard and round, and measured 2 ctm. in diameter, was situated in the left supra-renal capsule. Microscopical examination showed it to be a spindle-cell sarcoma, containing many large cells corresponding in appearance to ganglionic cells. These cells contained fairly large nuclei, and one or more well defined nucleoli.

On reviewing the literature of these tumors, he had been able to find a description of two such cases. The first was reported by Weichselbaum, and was taken from the body of a man, seventy-six years old, who died of pleurisy. The tumor was about the size of a cherry, and was designated "a ganglionic neuroma" on account of the presence of these ganglionic cells, the remainder of the tumor being considered as made up of nerve-fibres. The cells were distributed in about the same way as in the specimen just presented, they were spherical or elliptoid in shape, and the nuclei were generally eccentric. In the other recorded case, no nerve-fibres were found, but fibrous tissue, and smooth muscle tissue, and in size and shape it was not unlike a large white kidney. The specimen was found in a man, thirty years of age, who had suffered from Addison's disease, and it was described as "a ganglio-fibro myxoma."

A Case of General Tuberculosis—Death from Acute Pneumonia.—Dr. L. Emmett Holt presented the above specimens. A female child, aged three and a half years, with tuberculous antecedents, who had suffered for one year before death from tubercular glands in the neck. In the summer of 1891 she had an ordinary attack of entero colitis, after which she remained delicate, mode-

rately emaciated, and in a generally wretched condition. An examination of the chest in the middle of September showed only coarse scattered râles. There were occasional attacks of intestinal trouble during the fall, but no blood appeared in the stools. During October there was considerable improvement in the general condition, and she gained in weight. During November, however, she failed visibly and became exceedingly irritable if disturbed, but dull and apathetic if left to herself. Photophobia was quite marked; in fact, from her previous history, it seemed highly probable that a tubercular meningitis might be developing. A record of the temperature was kept, but no rise occurred until near the end of November; it then ranged between 100° and 103° F., continuously for one month. A few more râles were found in the chest, but no increase in the nervous symptoms. Eleven days before death the temperature suddenly rose to 104° F., and during the remainder of the disease it fluctuated irregularly between 101° and 104.5° F. With this high temperature there was an increase in all the pulmonary symptoms—cough, prostration, dyspnœa, etc. Signs of complete consolidation of left lower lobe soon appeared, and a little later similar signs over the right base behind. She died of exhaustion.

At the autopsy, the brain was found perfectly healthy. The bronchial glands were greatly enlarged, especially on the right side, where they formed a mass of some size about the right bronchus, one and a half inch in diameter and three quarters of an inch thick. These glands were cheesy, but not suppurating. In the upper lobe of the right lung there were scattered nodules of tubercular pneumonia from one-eighth of an inch to half an inch in diameter, cheesy at the centre, the intervening pulmonary tissue being quite healthy. At the anterior border of the right middle lobe the oldest process was located. On section, this portion showed fibrous tissue surrounded by old cheesy masses, and here the lung was adherent to the pericardium. The lower left lobe was uniformly consolidated, of a reddish-brown color, with a thin layer of recent lymph on its surface. In the upper lobe of the left lung a circumscribed nodule of pneumonia was found, about one and a half inch in diameter, of a brownish-red color. On section, the rest of the lobe was found to be healthy. The lower lobe was uniformly consolidated, of a grayish-red color, slightly mottled, and showing a very slight pleurisy on its surface. The microscopical examination of the lungs showed a process having some of the characters both of a lobar pneumonia and of a bronchopneumonia, but not quite those of either. There was not much fibrin in the alveolar exudate, but the pus and epithelial cells were very numerous. The spleen, liver, and kidneys showed no essential changes. The small intestine was healthy throughout. The colon showed about a dozen old ulcers, chiefly in the rectum and descending colon, the largest ones being over an inch in diameter. The mesenteric glands were all enlarged and cheesy.

Pleuro-pneumonia; Empyema; Operation; Death from Secondary Pneumonia in the Opposite Lung.—Dr. Holt also presented specimens of the above. A female child, two years of age, was taken with symptoms of influenza, which rapidly developed into pneumonia. On the fourth day, signs of consolidation were found at the right base posteriorly. The temperature ranged between 101° and 104° F. for ten days; it then fell nearly to normal, but there was no improvement in the general symptoms. Examination of the chest showed at this time exaggerated breathing on the left side, and over the whole right chest there was dulness almost amounting to flatness, excepting at the extreme apex in front, which was tympanitic. There was distant bronchial breathing everywhere, but no râles, although two days before râles had been numerous. The heart was displaced to the left, beyond the nipple line, and an exploratory puncture showed pus. Two days after, the chest was incised in the eighth intercostal space, at the posterior axillary line, and half a pint of pus evacuated, and drainage-tube inserted. For three days after the operation the child did well, the temperature remaining below 101° F.; it then rose rapidly to 104° F., and fluctuated between 103° and 105° F. for five days, at the end of which time the child died, on the twenty first day of the illness.

The autopsy showed all the organs excepting the lungs essentially normal. Over the right side of the chest there were recent adhesions at the apex anteriorly, to the pericardium and to the diaphragm; posteriorly, the lung was not adherent. There was a large quantity of pus in the pleural cavity. The right lung was covered everywhere with a thick layer of yellowish-green fibrin. The lung was moderately compressed, but nearly as large as the left one. On section, it showed consolidation everywhere except along the anterior border. The left lung showed recent fibrin over the lower lobe, which was about three-fourths solidified; elsewhere, slightly emphysematous. Section showed a typical broncho-pneumonia. The bronchial glands were enlarged but not cheesy. The cause of death in this case seems to have been the development of the disease in the left lung, which was apparently coincident with the rise of the temperature three days before death. The rapidity of the formation of the pus was very striking. A bacteriological examination was made from the pus drawn from the chest at the exploratory puncture, and pure cultures of the pneumococcus obtained.

Compression Myelitis, Associated with a Columnar Area of Necrosis, Extending a Considerable Distance above the Compressed Portion of the Cord.—Dr. Ira Van Gieson presented microscopical specimens from the above case. The clinical history was unfortunately very defective. The patient was a middle-aged man, who had been run over by an ice-cart, sustaining a fracture in the lower dorsal region. He survived the accident two and a half months. During this time there was an extreme degree of paraplegia, and very extensive trophic changes, giving rise to enormous bed-sores. One of these sores extended from the sacrum upward between the scapulæ, while there were ulcers over the heels, and very deep ones extending even between the calf muscles.

At the autopsy nothing was found worthy of note except the condition of the spinal cord. This was so greatly flattened in the eighth or ninth dorsal segment, as to measure only 3 by 6 millimetres. Above this flattened portion, in the dorsal region, and in the seventh cervical segment, was a columnar area of softening, situated in the posterior columns, and involving the caput of the right posterior horn. On cutting the cord transversely, the softened material flowed out, leaving a sharply-rimmed cavity. Microscopical examination of the flattened portion showed that the cord had degenerated into a fluid mass, contained within the membranes. The columnar area of necrosis was readily seen with a low magnifying power.

Dr. Van Gieson referred to a similar case which had been reported by Dr. C. L. Dana, and exhibited the plates illustrating this case. He reported his case because, with one exception, it appeared to be unique, and because he was unable to understand the nature of this process.

The Society then went into executive session.

Stated Meeting, January 27, 1892.

H. P. Loomis, M.D., President, in the Chair.

Lesions of Bright's Disease.—Dr. Francis Delafield exhibited on a screen a series of photo-micrographs showing the lesions of Bright's disease. He said that he had found it convenient to divide Bright's disease as follows: Acute and chronic congestion, acute and chronic degeneration, acute exudative nephritis, acute diffuse nephritis, chronic nephritis with exudation, and chronic nephritis without exudation. He first exhibited photographs of the normal kidney as a standard of comparison,

and then a fine series illustrating the lesions found in the various forms of Bright's disease just enumerated.

At the conclusion of this exhibition, the Society passed a vote of thanks to Dr. Delafield.

Dr. J. West Roosevelt said he wished to direct attention to the fact that Dr. Delafield had made a practical classification of the diseases of the kidneys, which was not only pathologically complete, but, in his opinion, had never been surpassed, as a guide to the clinician in diagnosis, prognosis, and treatment.

Rupture of the Lung Following Pleurisy with Effusion.—Dr John S. Ely presented a specimen from this case. The patient was a man of intemperate habits, with chronic Bright's disease, who had been admitted to Bellevue Hospital on account of pleurisy with effusion. About fourteen ounces of bloody serum were withdrawn with the aspirator, but the physical signs indicated that the chest contained a much larger quantity of fluid than this, the removal of which was probably prevented by sacculation. Shortly after admission, after sitting up in bed, he suddenly became deeply cyanosed and fell backward, and at the same time a considerable quantity of fluid was ejected from his nose and mouth. He died almost immediately. At the autopsy, the right pleural cavity was found to contain a large quantity of fluid; the lung was compressed against the vertebral column, and many adhesions caused sacculation of this fluid. At the base of this lung there was one adhesion which bound the lung quite firmly to the diaphragm, and after removing the lung and inflating it under water, two ruptures of the lung were discovered in the immediate neighborhood of this adhesion, one, three-quarters, and the other, one-eighth of an inch in diameter.

It had been suggested that these ruptures had been produced by the aspirating needle, but this could be excluded, as the rupture was on the under side of the lung, near the vertebral column, and hence out of the reach of the needle. Furthermore, the patient died very suddenly more than thirty hours after the introduction of the needle.

Gangrene of the Lung Complicating Pneumonia.—Dr. Ely also presented a specimen of the above. The patient was at first admitted to the hospital as a case of acute alcoholism, but he soon gave evidences of pulmonary consolidation, and the profuse fetid expectoration led to the supposition that there was gangrene of the lung. At the autopsy, one lung was found to be closely adherent to the thoracic wall, and the entire lower lobe was passing from the stage of red to that of gray hepatization. The base of the lung was honeycombed with numerous cavities, which were filled with fetid greenish material. It was interesting to note that these cavities all possessed a line of demarcation, or a sort of pyogenic membrane, which might in time have led to an isolation of these areas, and possibly, to a cure. The gangrene was most noticeable at the lower and poster or portion of the lung, and this situation seemed to favor the theory of gangrene complicating pneumonia, being due to stasis of the blood resulting in necrosis. There was no evidence of thrombosis.

Dr. Warren Coleman narrated the history of a case of gangrene of the lung, occurring in a longshoreman, who had fallen from a height of fourteen feet upon a log. The man continued at his work after the accident for four or five days, and was then seized with severe dyspnœa. He was taken to Bellevue Hospital, where he died about fourteen hours after his admission. The autopsy showed the chest cavity filled with sanious fluid, which had become purulent during the last twenty-four hours of life. The lung was compressed against the spinal column, it was almost completely atelectatic, and was gangrenous in that part of the lung corresponding to that part of the chest which had been struck in his fall. The exterior of the chest showed no lesion at this point, the ribs were not fractured, and the costal pleura was intact. Apparently a pulmonary apoplexy had occurred at the site of the injury, and in the subsequent breaking down had caused the rupture of a bronchus through the pulmonary pleura, for here an opening about the size of a quill was discovered, and on making pressure, gangrenous matter oozed through it. He thought the pyo-pneumothorax developed at the time of the sudden appearance of the dyspnœa.

Pure Cultures of the Lepra Bacillus.—Dr. J. M. Byron exhibited specimens of the above. These were of peculiar interest, as there had been much doubt as to the existence of pure cultures of this bacillus. The specimens presented represented the fourth generation, and they were made on agar, with glycerine containing one-half per cent. of rock candy, or two per cent. of ordinary sugar. They were obtained about eight months ago, from a patient in Charity Hospital. As a means of comparison, he also exhibited tubercle bacilli in the same culture medium. The gray cultures of the lepra bacillus appear at first as very small, star-like, grayish-white spots, so flat and transparent as to be seen with difficulty. At the end of three days they reach the size of the head of a small pin, and then apparently cease growing; but if cultivated for two or three months in the incubator, they will be found to be slightly larger, appearing as irregular granular masses, dark in the centre, yellowish at the periphery, with wavy edges. Under the microscope they bear a close resemblance to tubercle bacilli, except that some of them present a club shaped extremity, probably due to early involution forms of bacteria, on account of the necessarily prolonged cultivation in the incubator.

An Improved Turn-table for Rapidly Collecting Sediments from Fluids.—Dr. George C. Freeborn said that last November he had presented, in a crude form, an apparatus for this purpose. With it, a speed of nine hundred revolutions could be obtained, but the machine in its improved form was capable of making twelve hundred to fifteen hundred revolutions per minute, thus securing more thorough sedimentation. This machine is made by the New York Pattern Machine and Die Co.

A Lithopedion.—Dr. Wilson, of Brooklyn, presented a lithopedion. So far as he knew, no specimen of this kind had been exhibited in New York since 1865, when one was presented to this Society. The present specimen was removed from a woman, sixty-six years of age, who died in St. Catharine's Hospital, in uræmic coma, forty-eight hours after her admission. After her death, her friends stated that about thirty years before, while she was in Bavaria, her native country, she was seized with labor pains which lasted several days, and finally disappeared. She was not delivered of a child, however, although her physician assured her that she was pregnant. The child was never born, and she become the object of much ridicule from her female friends. At the autopsy, the uterus and right ovary were found to be normal, but the left ovary was the seat of a dermoid cyst about as large as an orange, consisting of a nodular shell, containing fatty material and a small quantity of hair. Situated free in the abdominal cavity, outside of and above the uterus, and in the median line, was an oblong tumor about twelve inches in length. Its long axis was transverse to the abdominal cavity, and the tumor was adherent to the anterior abdominal wall, above the umbilicus, by a small calcific plate about one inch in diameter. The tumor had no connection with the uterus or ovaries. After enucleating it, it was found to be a fœtus in a state of complete calcification. The head could be seen flexed upon the thorax, and the thighs on the abdomen; the left leg was dislocated at the knee-joint, and attached to the mass by a fibrous band; the right shoulder was quite prominent, and the digits on the hands and feet could be plainly seen. The umbilical cord could also be made out. The speaker said that he had not cut into the tumor, but judging from the weight of the mass, and its yielding to pressure, he thought it probably consisted of nothing but adipocere. In one re-

ported case, he believed even the striations of the muscles had been preserved, but in the majority of instances the interior of the mass was converted into adipocere.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE CAVENDISH LECTURE—SOME POINTS IN THE ETIOLOGY OF TYPHOID FEVER—MR ALLINSON AND THE GENERAL MEDICAL COUNCIL—THE ASSOCIATION OF MEMBERS OF THE ROYAL COLLEGE OF SURGEONS—THE MIDWIVES' BILL—INCREASE OF SMALL-POX.

LONDON, June 11, 1892.

IN the Cavendish Lecture, recently delivered before the West London Medico-Chirurgical Society, Sir Charles Cameron (ex-President of the Royal College of Surgeons of Ireland) discussed some points in the etiology of typhoid fever. He said that the question as to whether an attack of typhoid fever could occur without an antecedent one was a question which had been discussed frequently; it had been answered in the affirmative by one of the greatest authorities on the subject, the late Dr. Murchison. The spontaneous origin of the *materies morbi* of the disease by the decomposition of fecal matters was a theory which recent bacteriological research had completely exploded. There was now a consensus of medical opinion in favor of the microbial origin of typhoid fever, and the biology of the microbe thus came to be a subject of great interest. There were pathogenic microbes which apparently soon perished when detached from the animals in which they had been developed, while others were more persistent, and the spores of many kinds long retained, like vegetable seeds, their vitality and power to develop under favorable conditions. The pathogenic microbes seemed to live and multiply when supplied with nutrient material, from which we might infer that they might, when detached from animals, become deposited by accident in dead organic matter capable of affording nourishment to them. Probably the majority of such organisms would soon perish if the animals with which they were associated ceased to exist, but it was certain that the microbes which produced some diseases would continue. For example, the bacillus malariæ and amœboid bodies, and no doubt the bacilli and other micro-organisms producing all kinds of intermittent fevers, had an independent existence. They were found in many soils—in rich alluvium, and in the holders and banks of rivers, especially in tropical and subtropical climates. They existed abundantly in the British Isles in former times, and had been got rid of by the drainage and cultivation of the soil. These organisms were clearly of the earth, but they produced specific diseases in man.

The lecturer said he was disposed to think, without admitting or denying the theory, that there was a kind of hybrid fever (typho-malarial) intermediate between typhoid fever and ague—that there were several points of resemblance between typhoid and the intermittent fevers. Dr. Harley had pointed out the intimate connection between them in the Lumleian Lectures for 1889. Dr. Johnston, in treating of the continued fevers of the Southern States of America, stated that typhoid was probably changing its character there and becoming less defined and of a milder type; he believed that many cases of so-called malaria were really typhoid fever, and concluded by acknowledging the existence of a typho malarial fever.

Sir Charles Cameron said he was inclined to look favorably on Dr. Woodhead's theory, that all bacilli were primarily saprophytes (*i.e.*, that they had an independent existence apart from animals), and that they became under altered conditions pathogenic and preyed upon living tissues. The saprophytes were, with perhaps the exception of the micro organisms connected with malarial diseases, innocuous, but, under certain conditions at present not well understood, they might acquire virulence.

MM. A. Rodet and G. Roux had stated positively that the typhoid bacillus of Eberth was merely an altered and virulent form of the bacillus coli communis described by Escherech. Their researches seemed also to show that the bacillus coli communis, which might exist in the human organism without doing injury to the latter, could become highly virulent and infective when introduced into water. They hence concluded that not only typhoid dejections, but simple fecal pollution of water, might produce typhoid fever in those who drank it. This view seemed to favor Murchison's pythogenic theory, but they really differed completely. In the latter it was assumed that the toxic principle of typhoid fever might originate in decomposing fecal matter, but, according to Rodet and Roux, a harmless saprophytic organism acquired by mere contact with water new and infective properties. It was not improbable, then, that an organism which could exist for at least some weeks in earth and water was the *materies morbi* of typhoid fever. This organism might be harmless until it had undergone certain transformations in the system, or it might be immediately infective. Such an organism was clearly much nearer akin to the microbes of malarial disease than to those of such affections as gonorrhœa, typhus fever, or measles. The conditions of soils or water had little relevancy to these, and most other of the infective diseases; but it had a great deal to do with remittent, intermittent, and typhoid fevers; perhaps, also, with dysentery and diphtheria.

The lecturer then discussed Pettenkofer's theory on the relation between ground water and typhoid, and remarked that it had not received much support in England.

After reviewing the sanitary arrangements of Dublin, the lecturer said we must look in the soil for the cause of the endemicity of typhoid fever in Dublin and in other places. That typhoid fever more than held its own could only be accounted for by assuming that the microbes of the disease had established themselves in the soil, that they multiplied therein, and that they issued occasionally from it into the atmosphere, which, consequently, became infected. This theory was greatly strengthened by the fact that the porous soils were to a much greater extent likely to be the habitat of the disease than the stiff clays. The action of strong winds and the rising and sinking of underground water more readily caused movements of air in gravels and loose soils than in clay; the escape of microbes from the former under such circumstances must the more freely occur. Hoffman had pointed out that there was in porous soils what he termed a superficial zone of evaporation in which the moisture varied from saturation to zero. If the typhoid bacillus existed in this zone it must be immersed in water and in air alternately In the former case it remained in the soil, in the latter it might be transported to the air by air-currents. The chances of detaching micro-organisms from most surfaces were slight, but it must occur now and again. Those of typhoid fever had not yet been detected in the atmosphere, but pus organisms and the microbes of diphtheria had.

The lecturer concluded by speaking of prevention. He said that all measures to be used for this end related to the ground—directly or indirectly. A supply of pure water was absolutely necessary. He said also that he was convinced that typhoid fever often occurred through underground air entering our dwellings. This might, to a great extent, be prevented by having even the thinnest layer of asphalt or allied material covering the whole of the site on which the house rested; no air or moisture could pass through such a layer. As microbes were most abundant in the upper layers of soil, the water from superficial wells should not be drank.

The most notable incident at the recent session of the General Medical Council was the removal of Mr. T. R. Allinson from the register on the ground of conduct "in-

famous in a professional respect." Mr. Allinson is a disbeliever in the efficacy of vaccination, and has written on the subject in rather free terms He also has but little faith in drugs, and terms his medical brethren "professional poisoners." The alleged misconduct for which he has been haled before the Council, however, has been his system of advertising himself in the lay press, and his giving medical advice in the columns of a weekly newspaper. If the Council are going to put down medical advertising they will have their hands full, for numbers of medical men advertise in various ways, though perhaps not to so glaring an extent as Mr. Allinson has done. What else than an advertisement is it to procure the insertion in the column of fashionable intelligence in the daily papers the announcement that "Dr. and Mrs. —— have returned to —— from ——." Where is the line to be drawn as to what is professional and what is not? In the Publishers' Column in *The Times* advertisements of medical books by leading medical men appear, but for the same books to be advertised in the ordinary columns of the same paper is *infra dig.* Mr. Allinson's proceedings have undoubtedly not been such as to commend themselves to those who desire to uphold the honor and dignity of the profession, but whether the General Medical Council will succeed in effacing him remains to be seen, for he has obtained an injunction against them in the Queen's Bench. Even if he is removed from the register the present state of the law is such that there is nothing to prevent him from continuing to practise provided that he does not assume medical titles or pretend that he is a medical man.

The Association of Members of the Royal College of Surgeons has fallen upon evil days. They were unsuccessful in the recent litigation and are now mulcted in heavy costs which they are unable to pay. At the present moment they are further suffering from internal dissensions. Meanwhile the original controversy seems as far as ever from settlement.

The Committee of the House of Commons on the Midwives' Registration bill will issue a report on the subject shortly.

Small pox is still on the increase in London.

DELIRIUM TREMENS; HAS IT A DUAL CAUSE? "NO."

To the Editor of the Medical Record.

Sir: When a physician is writing on a subject so familiar to the profession as the one in question, it would savor too much of the pedant for him to take up time in describing its symptoms and course. Keeping that principle in view, I shall at once enter on the question raised above.

Text-books tell us that an attack of delirium tremens is due to one of two causes, viz., drinking to excess, and here it occurs at the height of a debauch, or the sudden deprivation of alcoholic stimulants from a person, or system, habituated to large and repeated doses. These are the causes accepted by most authorities. We find, however, as related by Hammond, that eminent physicians have questioned both of the causes above stated. "Thus," he says, "Aitkin denies, in very positive terms, that delirium tremens may occur as a consequence of cessation from drinking." "While Watson, on the other hand," continues Hammond, "assigns no other cause than that the habitual stimulus has been diminished or abandoned. We thus see, strange as it may appear, that both the causes now accepted have been in the past discredited by different observers.

Now, it is certainly time to look the question squarely in the face and endeavor to determine (1), whether there is a dual causation, and (2), if not, what has been the stumbling-block in arriving at the truth of the matter. In looking at the matter from the above position, the question arises, Have we, in the whole realm of medicine, any analogy for the dual causation of delirium tremens? and to that question I must answer with an emphatic "No." To me, it is unreasonable to believe that similar conditions can be induced by causes of an opposite nature, or that delirium tremens can be caused both by an *excess of alcohol on the system*, and the *cutting off from the system* of that very stimulant. But, at the same time, in coming to that conclusion I feel assured that medical authorities must have strong apparent data on which to base their opinions. Apart, however, from those grounds, there is another influence at work to bias that opinion, which is, copying ideas in successive text books. I believe that in this way, to a great degree, is due the propagation of the error that delirium tremens has a dual causation. Before, however, I enter further into the question let me relate two cases of delirium tremens which have, among others, occurred in my practice within the past few years.

About three years ago I was summoned to W. G——, a daily drinker, suffering from a very tight stricture. As he was averse to a cutting operation I advised his removal to a vacant house near my residence, for the purpose of treating by continuous dilatation. As he was very frightened at his condition he at once concurred in all my suggestions. I put him to bed for a week, and during the following fortnight allowed him to move around a little. During the treatment I allowed him a full milk diet, and at no time was he unable to sleep. At the expiration of the three weeks of treatment I allowed him to return to work. (As his work was in a seaport village, and he still retained the house near me, he had to go and come daily a distance of seven miles each way.) He continued his work in that way for a week, when he contracted a fever. The fever I treated in my customary way—putting him to bed and cutting down his nourishment to almost nil On the third day his temperature dropped to normal, but that night he got no sleep. Next day he developed marked symptoms of delirium tremens, the family was alarmed, and I nonplussed. Not knowing his habits, my previous treatment of him for three weeks, when nothing of the nature occurred, put me off the scent. In relating the case, however, to a *confrère*, he remarked, Do you know that he (the patient) is a hard drinker? This cleared up the case and taught me a lesson, viz., that even a daily and hard drinker may stop the habit with impunity, provided his digestion be good and he take plenty of nourishing food. I am sure that my patient took no alcohol during the first three weeks of treatment, as he was cared for by his wife during the whole time, who is bitterly opposed to the habit. He probably returned to his habit during the week at work, to again relinquish it when I put him to bed and cut down his nourishment; this time, however, he developed delirium tremens as a result of being deprived of both food and alcohol.

The next case is still more interesting, teaching, too, another lesson. About eighteen months ago I was called to see a retired planter suffering from tropical lymphangitis. The attack was a severe one, and, as is frequently the case, the stomach was implicated, so that there was incessant vomiting. He had had the attack for two or three days previous to my being called, and although I was able at once to control the retching, yet for the next two days he was unable to retain anything on his stomach, and to make matters worse he had a little diarrhœa, preventing a resort to nutrient enemata. On the morning of the fifth day of attack, on visiting, his wife gave me the information that he had been unable to sleep the previous night, and that he seemed to be going out of his mind. On going into his room I found him in a state that appeared to be delirium tremens. Questioning his wife as to his habits she informed me that he only bought four ounces of rum per day, of a cheap, hence watered, kind, and that this amount he shared with an aged relative in the house. This story caused me to hesitate in pronouncing his condition delirium tremens. Next day,

finding the case more pronounced, I again taxed his wife about his habits, when she reiterated her former statement, adding however, "but he has done that for a long time—probably twenty years or more." This addition to her story led me to conclude that it was not so much the quantity, but the fact that he had indulged in the habit for so long a time that had resulted in delirium tremens, when he was thus unable to continue it; and treating him in accord with that conclusion—he could now retain a little milk and brandy—he was soon over his trouble. Two years previously he had had a similar attack, when his physician, one of the oldest and most prominent on the island, failing to diagnose the complication, pronounced that he would die, and that nothing could save him. His recovery in that instance I attribute to one or both of two causes, either that his physician's last prescription contained sufficient alcohol to relieve him, or that his stomach, gradually improving, enabled him to take nourishment.

This case is remarkable, illustrating as it does, that not only is the hard drinker liable to delirium tremens from failing to use his accustomed stimulant, but that also the moderate drinker may develop it, under certain circumstances.

The cases above mentioned also serve to prove unmistakably, that about one of the alleged causes of delirium tremens there can be no doubt whatever, viz., that delirium tremens can be induced by withholding the accustomed stimulant from a person addicted to the habit of taking it regularly

Granting, then, that we have proved one of the two alleged causes of delirium tremens, let us now consider the second, viz., that delirium tremens can be induced by the presence of too much alcohol in the system. Now, I do not deny that we may have alcoholic poisoning, with perhaps delirium therefrom, but I do maintain that the result is in no way similar to that produced by the withdrawal of alcohol from a system accustomed to it. In order to maintain my position, I shall relate a circumstance which occurred on the day I began to write this paper, as it serves to illustrate well how delirium tremens occurs in those who apparently drink themselves into it. On the day in question a man came into my office whom I knew to be a hard drinker at times. Knowing that I could take the liberty, I asked him whether he had ever seen a man in delirium tremens, thinking perhaps that he would give me his experience. He replied, "Oh, yes, and I confess I was so once myself." "Let me hear how it occurred," I said. "I was at that time," he answered, "keeping a liquor-shop, and I made it a habit to take a bitter the first thing as I opened in the morning, and some eight or ten at intervals during the day. This I had done for months. But one morning, as I took my accustomed drink, it immediately returned, and I took another and another with the same result. Thirst now came on and I drank enormous quantities of water, but only to vomit it as soon as it hit my stomach. I now tried stimulants in various forms, only, however, to be instantly rejected by the stomach; and by night I was in delirium tremens, and fortunately I have a little medical knowledge, as you know,"—he was once in my employ—"which enabled me to check it before I got completely off my legs."

Now, this man's story, thus told, illustrates well, as I have said, how delirium tremens occurs in those who apparently drink themselves into it. It will be found in all such cases that the stomach has absolutely refused to retain anything for at least twelve hours. Now, in debauches that result in delirium tremens it is customary to drink from twelve to twenty or more times, in the twenty-four hours; hence, when the stomach refuses to retain anything for even six hours, the patient has been cut off really from six to eight or ten drinks. In the case of the man above mentioned delirium tremens set in in twelve hours, because his system had been deprived actually of from eight to ten drinks. It will be found, too, that in debauches extending over a day or two or more, the habit of drinking very frequently can be formed in a very short time; and it may be laid down that the shorter the interval between drinks the earlier will delirium tremens commence after the stomach has refused to do its office, and that for obvious reasons.

Now, most authorities state that nausea, vomiting, anæmia and other gastric disturbances are the earliest symptoms of delirium tremens. What I maintain, however, is that it is due to those symptoms appearing in a drunkard that he gets delirium tremens; for, in the first place, the patient is unable thereby to take the proper amount of nourishment, and in the next, as those symptoms increase, he is cut off from even his customary stimulant. It is true the gastric disturbances above mentioned are caused by his indulgence in alcohol, but such by right belong to the chronic effects of alcohol. It is thus seen that when the chronic effects reach that stage which cuts off the further indulgence that delirium tremens results, but we must remember that that result is not due to the accumulation of alcohol in the system, but to the fact that the habit is thereby stopped, and that in the vast majority as effectually and with the same results as if the patient of his own will had relinquished the habit. I have thus endeavored to make plain to my readers that delirium tremens occurs, not from a dual causation, but from one causation, and that is the cutting off of the stimulant either voluntarily or involuntarily from a person previously habituated thereto. This may, I think, be enlarged as follows:

Delirium tremens is a disease of the nervous system, characterized by various mental disturbances and brought on in a person habituated to alcoholic stimulants, when the supply of stimulant has been stopped, either voluntarily or involuntarily, and when at the same time the full supply of food necessary for the maintenance of the system in health has been cut off, either voluntarily or from inability of the stomach to retain and assimilate such.

Perhaps I should make it plain that I did not quote the cases above mentioned for the sole purpose of bearing out my contention, but from the fact that each presents peculiar features.

Now, although I have myself answered the question involved in the title of this article, I now put the question for a discussion to the many readers of the RECORD, with the assurance that I could find no fitter tribunal. I must ask them, however, to depend not so much on their past experience as on the careful investigation of all fresh cases that present themselves. And I feel assured that you, Mr. Editor, will give your pages for the elucidation of a question which even if of minor importance is yet worthy of investigation for the sake of the truth involved.

R. F. LICORISH, M.D.

BRIDGETOWN, BARBADOS, WEST INDIES, May 28, 1892.

Fighting Mice with a Bacillus.—Professor Loeffler's bacillary crusade against the field-mice of the Thessalian plain has ended in victory. The latest reports announce that the fields are strewn with the corpses of mice. It will be remembered that Professor Loeffler some time ago discovered a new bacillus, the "bacillus typhi murium," which has the power of producing a certain disease in mice, and in mice alone. A plague of field-mice, threatening to destroy the harvest, having appeared in Thessaly, he was appealed to by the Greek Government, and immediately started for Athens. He began his experiments by treating field mice in the laboratory with injections of his bacillus cultivation, and when these experiments showed his method to be undoubtedly the right one, he started for Thessaly with a staff of Greek doctors. Bread-crumbs, saturated with the bacillary substance, were strewn broadcast over certain fields, and as early as a week later the results were visible. Success being now assured, Professor Loeffler will return to Germary, and the bacillus cultivation will be carried on at the seat of war itself.

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Original Articles.

AN UNIQUE DERANGEMENT OF THE KNEE-JOINT DEMANDING SURGICAL INTERFERENCE.[1]

BY ROBERT F. WEIR, M.D.,

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THE phrase internal derangements of the knee joint, given by the English surgeon Hey, it is now well understood comprises sundry disorders which are more definitely known and expressed as floating cartilages and as displacements and distortions of the intra-articular cartilages. But while the ordinary conditions belonging to loose bodies in the knee joint are tolerably clearly understood in their etiology, yet sundry peculiarities belonging to this affection have only been recently brought to notice. I have had occasion elsewhere [2] to report two cases of what was then considered, upon microscopical examination, to be sarcomatous pedunculated growths of the knee-joint, but in which the progress of time, as well as an increase of experience, has shown that they were more largely due to inflammatory changes, rather than to those of neoplastic origin. These floating bodies, which present the symptoms of the usual loose cartilage, are, thanks to the able investigations of Mr. Herbert Allingham,[3] to be attributed to outgrowths from the alar ligaments, fatty in character, and somewhat changed in character by the repeated traumatisms from being nipped between the opposing ends of the bones. Since the report that I then made of my cases I have had an additional experience in which this demonstration of the origin of such fatty growth was positively made out.

Within the past two years however, another condition producing impairment of this articulation has come, in two instances, to my notice, and concerning which I have been unable to find any help in the literature upon the subject of joint affections. The first case was as follows:

CASE I.—A lady, forty-five years of age, married, in good general health, and free from rheumatic affections of any marked character, placed herself under my charge in January, 1890, for the treatment of a subacute synovitis of the left knee-joint. There was but a moderate effusion, and this had existed but a short time. Her joint trouble, she said, had been produced by much walking on the polished floors of a new country house. Only afterward, by much cross-questioning, did I learn that in the spring of the year 1889, she had, by the falling of her horse while driving, been thrown against the dashboard of the vehicle, striking with considerable force upon her knees. This injury, however, produced no lasting effects, and did not cause even any ecchymosis of the skin. Following this very slight traumatism she complained all the ensuing summer and fall, of stiffness in both knees, and more particularly on the left side. This symptom was noticed more especially after sitting still a length of time. The synovial effusion for which I was called upon to treat disappeared under the use of a light Pacquelin cauterization and subsequent fixation of movement by a water-glass splint. It recurred again, after considerable exercise, within the next three months.

I saw the patient again April 1, 1891. She complained much of a tight band around the knee above the patella, and that the knee-joint movements were further impaired in their action. For some time past increasing grating and rubbing sensations in the joint were noticed, and complaints were made of tripping, from time to time, over the slightest inequalities of the carpet in the room. As nothing definite was revealed by my examination, it was supposed that the slight stiffness observed, and the limitation in the motion of the joint, were due to the previous inflammatory action. She was, accordingly, directed to persevere in walking, at first with crutches and then with the cane, and to resort to massage. I did not see her again until my return to New York in November, 1890, from my summer vacation. She had been out of town and progressed only moderately well during the summer. She now called attention to a peculiar jumping movement, which could only be felt when the fingers resting lightly upon the patella, the leg was carried forward in extension, but could also be seen just outside the middle of the patella when flexion was partially accomplished, or more exactly, when the limb was bent one-third toward a right angle. With this jumping or overriding there was increased inability to flex the limb after it had been brought into a fully extended position, and, indeed, she stated that she could not change her limb from this extreme straight position to a flexed one unless, first, the limb was allowed to rest upon the floor. If the limb was kept rigidly extended in mid air, she would be unable to flex it without great pain, and if, while thus elevated, I forced the flexion, great pain was experienced, and with a jumping sensation, felt best to the outer side of the patella, the resistance would be overcome. There was also, with this, considerable difficulty when the limb was flexed, in bringing it to the position of extreme extension, though much less so than in the reversed conditions. The limb above the knee was atrophied, but not more than is usual in arthritic troubles. On testing it with a leg dynamometer, the left extensor femoris muscle was found to be one-third weaker than the corresponding muscle on the right side. Its tone was, however, markedly improved under the use of galvanism, without improvement in the mobility and satisfactory working of the knee joint. There was, therefore, no ground to believe that any paralysis of this muscle, which had been suggested as a cause, existed to explain the condition. I was also able, when the limb was fully extended, the heel supported, and the quadriceps extensor was thus fully relaxed, to appreciate, by crowding the patella against the femur or by gently pushing the patella upward, that a sudden overriding from the interposition of some abnormal membrane or tissue existed. This corresponded to the jumping sensation previously alluded to upward. As this was above the line of the joint, the possibility of a slipping of the semilunar cartilage, which the location of the slipping sensation outside the patella first originated, was excluded. None of these conditions was to be found in the right knee. No effusion was now present, nor thickening of the joint.

The diagnosis arrived at was not satisfactory, but it was believed that possibly a fatty growth from the lengthened alar ligament or from a portion of the subpatellar fat herniated into the joint, or even possibly some unusual form of distortion of the external semilunar cartilage existed, and an exploratory incision was therefore suggested to the patient. This she was unwilling to

[1] Read at a meeting of the Surgical Section of the New York Academy of Medicine, held April 11, 1892.

[2] On Fatty and Sarcomatous Tumors of the Knee-joint, MEDICAL RECORD, June 26, 1886.

[3] Internal Derangements of the Knee-joint, 1889.

accept, and it was only after the persistence of her symptoms till April 1, 1891, that she consented to the proposed surgical measure. At that time she was considerably disabled, walking with much limping and stiffness, and with the continuation of the difficulty of bringing the foot forcibly forward in walking, and of unlocking the limb when fully straightened out.

After appreciating the risk of failure from the admitted obscurity of the affection, and also the stiffness that might follow the operation, it was performed under ether and full antiseptic precautions as follows: By an incision three and a half inches long, beginning at the top of, and three-quarters of an inch to the outer side of the patella, and running downward, the fascia and capsule were separately incised, exposing the synovial membrane first at the upper inch of the wound. This membrane was here then divided, and this opening into the joint eventually enlarged downward to the cushion of the subpatellar fat, making the opening in the joint in length nearly two inches. This allowed of the satisfactory exploration of its cavity by the finger being introduced through the opening with the limb extended. Afterward by flexing the limb and rotating it as much as possible, the intra-articular cartilages were felt to be firmly attached and without any distortion. Now, by raising the patella, at first by hooks at its cut edge, but external to the synovial

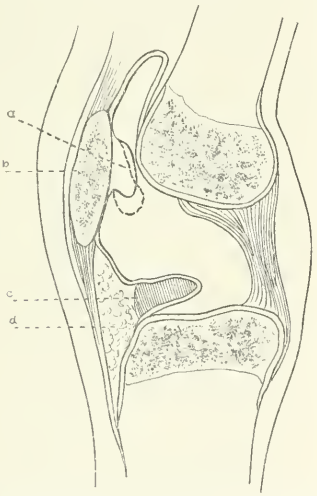

FIG. 1.—(Altered from Alliaghan's "Derangements of the Knee-joint.") The dotted line represents the shape of the thickened synovial fold when the patella rested against the femur—the natural position. The mass appeared thicker when the patella was lifted by retractors. *a*, hypertrophied synovial fold becoming pedunculated; *b*, patella; *c*, semilunar cartilage; *d*, subligamentous fat.

membrane, and subsequently by a blunt, flat retractor passed within the joint, the patella was so much raised that its inferior surface could be plainly and entirely seen. From its surface, at about the junction of its upper and middle third, was observed a bluish-white duplicature which hung downward when the bone was thus lifted up, and which, when the retractors were withdrawn and the joint permitted to resume its natural relations, could be seen through the incision to rest between the patella and the articular surface of the femur, with its thicker free edge downward, and of a length of nearly half an inch, so that it would be, and actually was seen to be, caught by the motions which I then made of pressure upward; in other words, as would occur in active flexion of the joint. This thickened fold of membrane was about one fourth of an inch in breadth, and extended all across the patellar surface, and hung free half an inch when the patella was lifted up, or when pressed upon by the patella was fully an inch long on its free surface (see Fig. 1) and then was reduced to about one eighth of an inch in thickness. With the forceps and scissors the entire mass was removed from a rather broad surface on the upper-joint surface of the patella, that is to say, over a space of one-third of an inch in diameter at its widest part. Slight oozing of blood followed, which was controlled by the pressure for a short time of an antiseptic sponge. The cartilage underneath the outer edge of the patella was somewhat irregularly grooved, but nothing was done to this. The joint, which had now a small amount of blood in it, was washed out with a 1 to 40 carbolic acid solution. An India rubber drainage tube was carried just within the joint, below the patella, and the incised synovial membrane sewn up from this point to its upper end by a continued catgut suture. The divided skin and fascia were then closed to the point of drainage by deep silk interrupted sutures embracing both tissues. Iodoform gauze and sublimate dressings were applied around the joint, and the limb placed in a Volkmann's splint. This was chosen rather than a plaster-of-Paris bandage over all the dressings, as meeting easier the needs of the case, as it was intended at the end of forty eight hours to remove the drainage tube. No reaction followed the operation and at the end of the second day the tube was taken out and the stitches removed. Then a small piece of iodoform gauze was introduced down to the synovial membrane at the point where the drainage-tube had rested. The leg and thigh were then encased in a plaster-of-Paris bandage over the antiseptic dressings.

On the thirteenth day the splint was removed, the wound found all but healed, and the patient thereafter was allowed to move the limb slightly in bed. On the eighteenth day the patient walked on crutches, slight motion of the knee being allowed. At the end of five weeks, some limitation of flexion being present, the patient was given laughing-gas, and with slight pressure some resisting adhesions about the upper angle of the wound were overcome, after which full motion of the joint was obtained. The patient has from that time to this done well, having regained the power of the limb, some slight sensations being, however, met with in going up and down stairs.

CASE II.—A single woman, aged thirty-six, who gave a history of rheumatism in both knee-joints seventeen years previously, which was repeated four years ago, and followed on this last attack with complete recovery within six months. She is a laboring woman and uses her knee a good deal during her housework, but does not remember to have hurt the joint at any time. Her present trouble commenced in January, 1891, with swelling and inflammation of the left knee-joint. The joint was distended and the surrounding tissues were red and painful. The pain was quite severe. She was kept by it in hospital nearly a month. Last June she first noticed a peculiar grating sensation when the joint was moved, and after this time the joint would become caught and locked at a point midway between flexion and extension. An attempt at further flexion would frequently cause considerable pain. The unlocking was only to be accomplished after the foot rested upon the ground, when the leg was extended in a straight line. It could not be bent without giving pain, unless she first placed, as before stated, her heel to the ground. With the quadriceps rendered lax in complete extension, and the patella crowded from below upward, a sense of jumping and resistance is to be distinctly felt. My diagnosis, from the experience obtained in my first case, was that there was a fold of membrane probably extending across the patella, or on the anterior aspect of the femur.

She was admitted into my wards, at the New York Hospital, on February 22, 1892, and the next day, under ether, an incision was made, the limb being extended in the long axis of the limb along the outer border of the patella about three-quarters of an inch from the bone. The joint was first opened at its upper part and the synovial membrane incised down to the level of the sub-

patellar fat. With a blunt retractor introduced into the joint, so as to elevate the quadriceps tendon above the patella, a beautiful exposure of the bone was obtained, and a transverse band, running across the upper third of the patella, was found, of what appeared to be a hypertrophied epithelium of the cartilage, which presented itself as an elongated fold hanging downward a distance of nearly three-quarters of an inch. On the corresponding surface of the femur was found a smaller but similar fold, about three-quarters of an inch from the edge of the cartilage, which was no more than half an inch across, attached just above the intercondyloid notch (see Fig. No. 2). These growths were removed without difficulty by

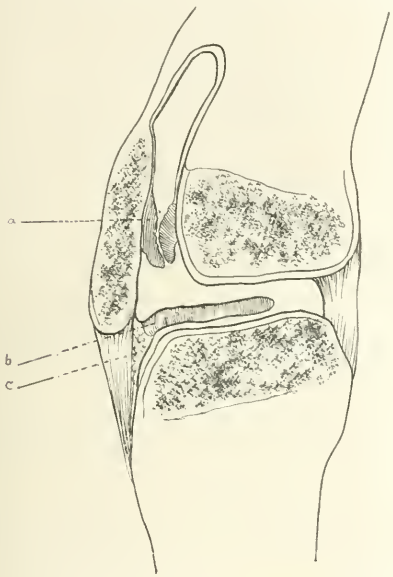

FIG. 2.—Folds Entirely Across Patella and on the Central Portion of Femoral Articular Surface. *a*, opposing folds, causing painful locking in flexion; *b*, semilunar cartilage; *c*, subpatellar fat.

a toothed forceps and scissors. The synovial membrane was then closed by a continued catgut suture to its lower border, where a couple of strands of silkworm gut were left to act as a drain. The skin and fascial tissues were secured by silk sutures. Antiseptic dressings and a plaster of-Paris splint were applied.

On the third day the patient complained of considerable pain. The temperature rose to 101° F. The dressings were removed and the joint found distended with fluid. Drainage was not freely accomplished by the strand of silkworm gut. This was removed and the opening in the synovial membrane slightly enlarged by a forceps. Clear synovial fluid readily escaped. A strand of iodoform gauze was allowed to rest against the synovial opening, and the dressings and splint reapplied. Pain immediately subsided. From that time convalescence was uninterrupted. At the end of three weeks she began to move her joint, which was stiff, and active and passive motions were resorted to. The adhesions yielded daily till the movements of the joint were fully restored.

The report of the Pathologist of the hospital in both cases was that the tissue removed was composed of a fibrous mass arranged in loose, wavy bundles throughout, in which were scattered round, oval, and spindle nuclei. No blood-vessels were found.

The mechanical impediment to the satisfactory motion of the joint in these two cases appears to me to have arisen, in the first place, probably from a traumatism which resulted in an effusion of blood, which either alone or by subsequent inflammatory action determined the formation of what has been happily described by Sayre as a joint blood blister. This loosened layer of epithelium, under the motions of the joint, was subsequently converted into a fold which produced the mechanical obstruction. In the second case the etiology may be more correctly referred to the rheumatic trouble, of which she gave a tolerably clear history. Though the first case was involved with considerable doubt in its diagnosis from the absence of any experience in this condition of affairs, yet attention was early drawn to the peculiar symptom of the difficulty after extension, of not being able to flex the limb without first bringing the action of the extensor muscles at an end by resting the heel on the floor, together with the singular jumping sensation which could be imparted to the patella when it was rendered free from muscular tension. These facts in the second case made the diagnosis comparatively easy.

This last patient, nearly two months since the operation, as you see, has a fairly satisfactory motion in the joint.

MICRO-ORGANISMS OF THE MOUTH.[1]

By JOSEPH H. LINSLEY, M.D.,

PROFESSOR OF PATHOLOGY AND BACTERIOLOGY, MEDICAL DEPARTMENT UNIVERSITY OF VERMONT; PATHOLOGIST TO THE NEW YORK INFANT ASYLUM, ETC.

MR. PRESIDENT, AND GENTLEMEN OF THE VERMONT STATE DENTAL SOCIETY: I have many times had the misfortune to be obliged to seek the aid of members of your profession, and the treatment I have sometimes been subjected to by them, while very generally resulting in my benefit, was of a very intense and extractive nature.

I have never anticipated being especially called upon to attempt an elucidation of any subject having a direct bearing on the details and operative work incident to the practice of your profession, and even an intelligent discourse on the theme of which I speak to-day would, but a few short years ago, have been practically impossible and excited but little interest.

But when a representative of your Society, four or five weeks ago, solicited of me a paper on "Bacteria of the Mouth," to be presented at the present session of your Association, I consented to his proposition with pleasure, more especially as I had intended, shortly, to undertake some bacteriological investigations in this direction. I very much regret the limited amount of time I have had in which to properly conduct many practical researches into some of the surprisingly numerous varieties of micro organisms which either find their habitat in the oral cavity, or are simply resting strangers, or loungers, as I might say, in this locality. While I shall exhibit to you some flourishing so called "pure cultures" of bacteria whose ancestors were removed from carious teeth, inflamed gums, and improperly cleansed "grinders," I have, necessarily, been obliged to resort to the latest text-books[2] on the subject, and to the various papers and articles which have recently appeared in medical and dental periodicals, both domestic and foreign, for the recognized varieties of germs infesting the mouth, their relatively respective frequency, etc.

To accomplish more than this, under the circumstances, was impossible, and the procuring of even the scanty material which I shall present to you exacted much more time and labor than you might at first imagine.

It is an interesting fact in the history of bacteriology that the first authenticated record and drawings of bacteria were made from micro-organisms discovered in mucus from the human mouth, by Leewenhoek, in 1683. From this time until about 1860 but little progress was made in this subject, and the rapid strides and the accumulation of important data accomplished in recent years has been very largely due to the improvement and perfecting of optical instruments. The fortunate dis-

[1] Paper read before the annual meeting of the Vermont State Dental Society, at Burlington, Vt., March 17, 1892.

[2] Miller: Micro-organisms of the Human Mouth.

covery, by Koch, of the use of artificial, solid, transparent food media, was of scarcely secondary importance in the development of bacteriology, by facilitating the separation, culture, and examination of germs.

A brief description of the more common culture-media used for separating and growing organisms of the mouth, together with the methods employed in obtaining pure cultures, will be of interest to those of you who are unfamiliar with the details of bacteriological investigations.

Nutrient Gelatine. This is composed of beef-juice, or beef extract, to which is added from five to twenty per cent. of best French gelatine, one to ten per cent. of dried peptone, and one to twenty per cent. of common salt. The reaction must be neutral, or very slightly alkaline. The addition of one to two per cent. of sugar improves the medium for the growth of mouth bacteria.

This material is easily prepared,[1] and is largely employed, especially for plate or dish cultures. It is unfit for use in the incubator, as the gelatine is liquefied at temperatures above 25° C. The characteristic growth of many bacteria is better exhibited on this substance than on the following.

Nutrient Agar-Agar. This is prepared [2] similarly to the foregoing, only that one to two per cent. of agar-agar is used, instead of the five to twenty per cent. of gelatine. (For detailed directions for the preparation of these media reference to the text-books on bacteriology is advised.)

Boiled Potato. This is a very simple and valuable nutrient medium. Any sound potato can be used, excepting those which crack open, or become mealy, on boiling. The potato is carefully washed and scrubbed with a stiff brush (an ordinary nail-brush answers very well), and the "eyes" and any unsound portions removed; it is then soaked for one hour in a 1 to 1,000 bichloride of mercury solution, and finally boiled in a steam sterilizer, or cooking "steamer," for one-half or three-quarters of an hour. It is then placed in a moist chamber, or covered glass dish, which has been sterilized, and in the bottom of which has been placed a piece of filter- or blotting paper, slightly moistened with a 1 to 2,000 bichloride solution. If the proper precautions have been observed in their preparation potatoes thus treated will remain germ-free indefinitely, and can be used at any time at a moment's notice, for the planting of material from which cultures are desired.

Many bacteria exhibit their most characteristic growth on this medium, and but few germs are known which refuse to exist upon it. Occasionally a micro organism is met with which requires for its full development a different soil from any of the three media just enumerated. In such cases other substances are used, such as sterilized blood-serum, starch-paste, boiled hen's egg, etc.

Liquid media are also employed in the cultivation of micro organisms generally, as well as for those from the mouth, but more especially for studying the progress and phenomena of putrefaction, fermentation, decomposition, etc., occasioned by the action of bacteria. Such media are bread-juice, peptonized beef-bouillon (to which has been added 2 per cent. of sugar, with occasionally the addition of starch), urine, milk, watery extracts of various plants or grains, juice of fruits, saliva (to which some nutritious substance has been added), etc.

Pure cultures are obtained by transferring a minute quantity of a "colony" from a glass plate or Petri dish, on the end of a sterilized platinum needle, to a tube of nutrient medium, where it is "planted," by either thrusting the needle directly through the middle of the solidified culture-medium in a test-tube, then twisting the needle a few times between the thumb and fingers, and carefully withdrawing same (the so-called "thrust," "puncture," or "stab" culture), or by drawing the point of the impregnated platinum needle, which has been slightly bent, across the surface of the medium, which has been allowed to solidify in the tube in an oblique direction (the so-called "scratch" or "surface" culture).

Considerable work and investigations in this line can be done by the practising dentist or physician without investing in an expensive outfit. At least it is quite practicable for any practitioner, who desires to determine the existence of any particular species of micro-organism in certain cases, to himself inoculate a prepared tube of gelatine, or agar, with the suspected material, and send the same immediately to a bacteriologist for further treatment, examination, etc.

The following is a procedure I have employed in the investigations of this subject, and is, as you will admit, exceedingly simple and quite satisfactory. I use the glass phials of various sizes used by some wholesale drug houses, for holding physicians' samples of pills, parvules, tablets, etc. These phials are sterilized, filled for from one to two centimetres with sterilized gelatine or agar, and their mouths closed with the ordinary cotton-wool plugs. When a patient comes under treatment, having a lesion of the mouth, teeth, or gums, the bacteria of which it is desired to cultivate, the dentist sterilizes an excavator, by passing it back and forth through the flame of his spirit-lamp or Bunsen burner a few times, and carefully removes a bit of material from the mouth and pushes it just into the gelatine in the prepared bottle. The same day, at the first opportunity, this is sent to me, and dish cultures, etc., are subsequently made from the specimen.

To review all the varieties of bacteria which have thus far been described and obtained (over 100 species) from the buccal cavity, with their individual peculiarities, etc., would require several papers, each fully as long as the present one.

I shall therefore confine myself to the consideration of a few of the more prominent and frequently occurring varieties, and afterward offer some comments applicable, in a general way, to the subject.

It has been customary for many observers to classify every thread producing germ which they find in the oral cavity as "leptothrix buccalis." This is to be deprecated, as there are several bacteria of the mouth which form threads.

The name "leptothrix buccalis" (like "bacterium termo") designates no particular organism possessing peculiar characteristics, and the name no more deserves to be retained than "denticola," "Buhlmann's fibres," etc.; the less so, since it has always been the expression for an obscure and erroneous conception.

Morphologically, as well as physiologically considered, leptothrix buccalis has been regarded as a veritable wonder. It has been said to perforate and split up teeth, its elements to cause all kinds of diseases in the oral cavity, to penetrate into the lungs, the stomach, and other parts of the body, and everywhere to manifest a destructive influence. As absolutely nothing was known concerning the biology and pathogenesis of this organism, all sorts of wonderful properties were ascribed to it. It is, therefore, high time to banish this confusing name from bacteriological writings (Miller).

Miller suggests the name of leptothrix innominata for those germs of thread-like growth whose biology is too ill understood to place their relation to other bacteria of the mouth. Let us, for a moment, consider what the inducements are which the mouth, as a whole, offers to wandering homeless "bugs," that they so readily and promptly enter these premises, and not only obtain their own individual livelihood, but, unceremoniously, at once proceed to increase the members of their households. As pertinently stated by one observer,[1] the mouth forms "a kind of hot-house or forcing ground for their cultivation." Dr. Bergtold[2] says: "If one could find a perfectly sterile

[1] Woodhead: Bacteria and Their Products, p. 337.

[2] W. H. Bergtold, M.D.: The Mouth as a Centre of Infection, Dental Cosmos, vol. xliii., No. 2.

[illegible] can be obtained, already prepared, of Eimer & Amend, 205 [illegible] lifted up [illegible] inch long on its free surface the same firm.

mouth, he could also see at once that the opportunities for seeding it, so to speak, are excellent, in that every individual is more or less constantly taking in air and also food and drink through that channel, and in both these actions there are received numberless spores and other forms which later give us growths of bacteria."

The organic and inorganic substances found in the mouth, are the following:[1] 1, Normal saliva; 2, buccal mucus; 3, dead epithelium; 4, dental tissue softened by acids; 5, exposed pulps; 6, exudations of the gums, conditioned by the irritation of tartar, etc.; 7, accumulation of particles of food.

The carbohydrates and albuminous substances furnish the greatest nutriment for bacteria in the mouth, and are almost constantly present there at all times. They are found between the teeth, in cavities in the teeth, and also upon their surface, and in any depressions.

Perfectly pure, mixed, human saliva has no toxic properties, and in those cases which have been reported by Pasteur, Valpian, Gautier, and others, in which "unadulterated human saliva caused more or less morbid phenomena," it must be suspected that the samples used *were*, in some manner, contaminated.

Mixed with the various deposits of bacteria, etc., always present in the mouth, saliva may possess most energetic toxic properties, having many times proved fatal even, as abundantly demonstrated by numerous recorded cases. It is also probable that the saliva has far less antiseptic properties than is often ascribed to it, and the undisturbed growth of micro-organisms in the oral cavity would seem to sufficiently support this view.

The diastatic action of the ptyalin of the saliva, in changing starch into a variety of sugar, variously termed dextrose, maltose, or ptyalose, which, as soon as formed, produces an excellent culture-medium for those germs concerned in the process of fermentation.

According to Miller,[2] there are six different micro-organisms which are almost invariably present in every mouth. They are:

1. *Leptothrix innominata.* This occurs as thin, more or less zigzag threads. Found in the soft white deposit on teeth in every mouth. Is stained faint yellow by a solution of iodine in iodide of potassium solution slightly acidulated with lactic acid.

2. *Bacillus buccalis maximus.* Occurs as isolated bacilli, or threads, more often as "tufts of threads." Is the largest of mouth bacteria. Is stained brownish-blue, more or less deeply, with the iodine solution.

3. *Leptothrix buccalis maxima.* This occurs as long, thick, straight or curved filaments, somewhat similar to bacillus buccalis maximus. It is found in the mucous deposit upon teeth. Is not stained by the iodine solution.

4. *Zoaococcus vaginatus.* Occurs singly, or in chains of from four to ten cells. Chains have a sheath, and cells appear as flat disks, or as more rounded, even squares. Occurs in all unclean mouths. Not stained by the iodine solution.

5. *Spirillum sputigenum.* This is seen as rods, curved like commas, having very active spiral movements. Found in all mouths, especially in unclean ones. Is the soft deposit on the margin of inflamed gums of dirty mouths. Stains more readily than the foregoing.

6. *Spirochæte dentium* (*denticola*). Found as spirals of very irregular windings and unequal thickness. It is found under the margins of the gums, when covered with a dirty deposit, and slightly inflamed, or, in other words, gingivitis marginalis.

There are a great many mouth bacteria proper, not invariably found in every mouth, which are uncultivable, and whose pathogenesis is unknown. Among them Miller found a bacterium of enormous dimensions, in the mouth of a dog suffering from pyorrhœa alveolaris, which he has called leptothrix gigantea.

[1] Miller: Micro-organisms of the Human Mouth, p. 37.
[2] Ibid., p. 69.

There are also three or four kinds of germs from the mouth which give a blue or violet reaction with iodine, and from twenty to forty varieties which are cultivable, partly non-pathogenic, partly of unknown pathogenesis. The oral cavity is a favorite locality for many varieties of chromogenic, or color-producing, bacteria. These are widely diffused in nature, and occur abundantly in water, in the air, and various places.

In the mouth they are less numerous than the colorless germs, and probably on account of this preponderance the color is not visible when in this locality, but is readily developed during the culture of these micro-organisms on many of our culture-media.

Among the colors produced by different species of mouth bacteria, Miller gives a yellow, produced by at least eight kinds of bacteria; green, by 5; red, or reddish, by 3; blue, black, brown, orange, etc.

To study any of the bacteria microscopically, particles of matter containing them must be taken from the mouth and mounted directly on cover glasses, after which they may be examined fresh and unstained, or (after being carried through the flame of a Bunsen burner, or alcohol-lamp, three times) be stained and mounted permanently.

Many of the germs that have been found in the oral cavity are, of course, accidentally present, having been deposited just previous to an examination, and which would remain only a short period. The micro-organisms I have just mentioned as being termed "mouth bacteria proper" by Miller, are found in all healthy conditions of this cavity, but the variety and number is more or less greatly augmented when any morbid condition whatever occurs, such as inflamed gums, wounds, etc., of the mucous membrane of the mouth, dental caries, ulcerations, etc. Of these, Miller found, by inoculation experiments on mice, rabbits, and guinea-pigs, many germs the inoculation with which produced either death or a pathological condition of the animals thus treated.

These he calls "pathogenic mouth bacteria." Of the varieties separated, the following were studied more in detail: 1, Micrococcus gingivæ pyogenes; 2, bacterium gingivæ pyogenes; 3, bacillus dentalis viridans; 4, bacillus pulpæ pyogenes.

The first of these micro-organisms, micrococcus gingivæ pyogenes, was found several times in a case of pyorrhœa alveolaris, in the deposit around the teeth of a very filthy mouth. The second, bacterium gingivæ pyogenes, was found in the same mouth as the foregoing, and also in a suppurating tooth-pulp of a second person. Bacillus dentalis viridans, the third variety, was found in the superficial layers of carious dentine. In cultivation upon gelatine this bacterium produces a beautiful opalescent green coloring matter, which it imparts to the gelatine. The fourth bacterium, bacillus pulpæ pyogenes, was found in a gangrenous tooth pulp.

The inoculating material used was pure cultures of the different germs, mixed cultures, and gangrenous pulps, and the inoculations were made into pockets, beneath the skin of the animals, and by subcutaneous injections and injections into the abdominal and thoracic cavities. The pockets were made, as usual, at the root of the tail, and the injections with sterilized syringes.

Before giving the results of these inoculations, let us see what are the conditions necessary to be fulfilled in order to establish unrefutable proof of the pathogenic nature of any given bacterium.

According to Koch, a micro-organism must comply with the following requisitions before its pathogenic character is determined, the so-called "Koch's laws," or "rules:" 1. It must be proved to be present in all cases of the disease in question. 2. It must further be present in this disease, and in no other, since otherwise it could not produce a special definite action. 3. A specific micro organism must occur in such quantities, and so distributed within the tissues, that all the symptoms of the disease may be clearly attributable to it. 4.

After removal from the body of an affected animal, and its growth in pure culture, the inoculation of the latter into susceptible animals must produce the disease in question.

Miller's operations were followed by either redness and swelling, abscesscs, suppuration and gangrene of adjacent tissues, blood poisoning, and, in many cases, by death from septicæmia, peritonitis, pleuritis, etc. Inoculations with mixed cultures proved more dangerous than when pure cultures were used, and still more effective when gangrenous pulps were used, than with mixed cultures.

The diseases caused by the pathogenic bacteria of the mouth Miller considers under six heads, according to the point of entrance of the infection. 1. Infections caused by a breach in the continuity of the mucous membrane, brought about by mechanical injuries (wounds, extractions, etc.). These lead, either to local, or to general disturbances. 2. Infections through the medium of gangrenous tooth-pulps. These usually lead to the formation of abscesses at the point of infection (abscessus apicalis), but also sometimes to secondary septicæmia and pyæmia with fatal termination. 3. Disturbances conditioned by the resorption of poisonous waste products, formed by bacteria. 4. Pulmonary diseases caused by the inspiration of particles of slime, small pieces of tartar, etc., containing bacteria. 5. Excessive fermentative processes, and other complaints of the digestive tract, caused by the continual swallowing of microbes and their poisonous products. 6. Infections of the intact soft tissues of the oral and pharyngeal cavities, whose power of resistance has been impaired by debilitating diseases, mechanical irritations, etc. 7. Possible infections by the accumulations of the excitants of diphtheria, typhus, syphilis, tuberculosis, etc.

Dental Caries.—It has been proven beyond doubt, that decay of the teeth is caused by two different processes, namely: *a*, chemical; *b*, parasitical. The first is a decalcification of the enamel, or dentine, or both, caused by the presence of acids in the mouth, which have been formed from the fermentation of starchy and saccharine substances, resulting in a softening of these tissues, after which these latter form an excellent food-medium for many varieties of bacteria. The prevention of dental caries depends, first of all, upon strict cleanliness of the mouth, the importance of which can not possibly be overestimated; the details necessary for the proper fulfilment of the same it would be superfluous for me to suggest to you. Undoubtedly, good stiff tooth-brushes and plenty of clean water stand at the head of all measures of this nature. The next prophylactic means is the intelligent use of proper antiseptics.

By far the most perfect germicide known that can be at all employed in this connection is the bichloride of mercury, but the use of this substance is not without danger. It should not be used as a wash for the mouth in solutions of greater strength than 1 to 2,000, and even then care must be exercised in its application. Other antiseptics which have been recommended for the oral cavity, are salicylic acid, strength of 1 to 200, or 1 to 350, listerine, wintergreen oil, and like aromatic substances are suggested.

In this connection might be noted the germicidal properties of tobacco, either the juice of the leaf, or the smoke of the burning leaves. Certain it is, from results obtained by many experiments and observations, that tobacco-juice or smoke very speedily destroys bacterial life, but I would not, on this account, advocate its use, as the evil results of excessive indulgence in the "weed," more than counterbalance any possible benefits resulting from its antiseptic action on micro-organisms of the mouth.

In discussing the subject of infection, attention should be directed to the danger which exists from the spread of infectious forms of bacteria, that are liable to be present in the mouth, in various directions. It is not difficult, under certain circumstances, to excite an inflammatory process in the middle ear, the transmission of septic germs taking place through the Eustachian tubes; similar results may also occur from pyogenic bacteria being carried from the mouth to the throat, lungs, parotid gland, antrum, and even to the brain, as stated by Bergtold. When it is considered, that of all diseases of a parasitic nature, to which mankind is susceptible, dental caries is by far the most frequent, the possibilities I have just mentioned cannot be charged as being the improbable and unlikely speculations set forth by one who is "cranky" on the subject.

Upon reviewing the various literature on this question, especially those portions of it which refer to the dangers of infection between the dentist and his patient, I was much surprised to find no advice offered to the dental profession by competent bacteriologists as to the considerable (and ofttimes great) danger present to the patient by pathological conditions the dentist himself may be suffering from at the time of operating, and to point out the necessity of establishing, by legislative measures if required, laws or statutes which would prevent the occurrence of such dangers.

I refer more particularly to the jeopardy in which human life is placed when people are subjected to treatment by a practising tubercular dentist. This may seem to many of you a bit of superfluous advice, and you may retort that such a circumstance is beyond the bounds of possibility, but I assure you I have seen a tubercular member of your profession practising daily on unsuspecting, or ignorant patients.

My experience with dentists has been very limited, and therefore I am not in a position to make any assertion as to the frequency of such pernicious and dangerous proceedings; but the very fact that my slight, personal observations resulted in the detection of one such case naturally suggests a possibly more frequent occurrence of tuberculosis in practising dentists than might be supposed.

Since commencing the work incident to the preparation of this paper one of the local members of your profession has detailed another case, which was under his own personal observation, of a tubercular practising dentist.

The greatest danger, under such circumstances, is not, as some of you might imagine, in the infection of the patient by the transmission of the germs through the medium of the breath of the operator, but in the reception of tubercular material, which becomes dry on the handkerchiefs, clothing, linen, or instruments of the dentist. The prevention of such desiccation is so extremely difficult and impracticable that any consideration of it is useless. It cannot be effected, and hence it is not to be considered as a possible prophylactic measure to enable the victim of this malady to continue his professional work until physically unable to do so on account of the inroads of the disease.

It is not generally known that bacteria do not float in the atmosphere in the moist state, but only do so after desiccation, and then probably to no great extent, unless aided by more or less strong currents of air.

Tuberculosis is now almost universally considered to be an infectious disease, and of so contagious a nature that I candidly believe we shall, many of us, see the day when attention to preventive measures against possible infection from cases of this disease, will be as regularly insisted upon as are the sanitary requirements in cases of small pox, yellow fever, and typhus fever (with the exception of somewhat less vigorous quarantining) at the present day.

The period in which to accomplish this much desired treatment of tubercular cases, will depend upon the rapidity with which the laity, and professional men even, become educated to the full comprehension of the single and sole cause of the affection—the tubercle bacillus—and the proper realization of the benefits to be derived

from the adoption of such measures. And to the intelligent efforts and advice of the members of the medical profession, as well as to the great aid which you—members of the dental profession—can give by embracing each and every opportunity to inform your patients, especially influential citizens, as to the true character of tuberculosis, must the accomplishment of this end very largely devolve.

Of all the various ways by which tubercle bacilli find entrance into the human body (such as from the surface of the skin through wounds, by contusions, cuts, or otherwise; from the ingestion of milk and flesh from tubercular cows and animals, etc.), infection by inspiration, by the entrance of the dried germs through the mouth, and so on to the lungs, far surpasses in frequency all other methods of transmission. And this can only be accomplished when the medium on which the micro-organisms have been discharged from the body dries, or disintegrates, into powder or dust. For this reason the most dangerous source of infection is from handkerchiefs or cloths on which the sputum has been received (unfortunately a too common procedure), and on which it becomes dry in an exceedingly short time. Consequently by merely preventing the sputum of consumptives from drying the most important kind of infectious matter may be rendered harmless.

The first contradiction I have seen, by competent pathologists (who acknowledge the tubercle bacillus as the essential cause of tuberculosis), to the statement that the commonest source of infection is the inhalation of dried bacilli from handkerchiefs, linen, clothing, dust from the floors and ceilings of rooms previously occupied by tubercular subjects, etc., was recently made by Dr. J. West Roosevelt, of New York.[1] He maintained that "there was much more likelihood of getting an overdose of the virulent germs" (of tuberculosis) "through the alimentary tract, either by the ingestion of meat or milk, or in children by putting articles of every nature into their mouths, no matter where they may have lain," than by the manner which I have just described.

While recognizing the value of the opinion of so able an authority as Dr. Roosevelt, I am convinced that his statement will not be corroborated by the majority of pathologists and bacteriologists in this country, or on the continent. True it is that much needless alarm may be created in the minds of the public by the advocacy of too severe and unnecessary measures of prevention, such as quarantining, etc., by prejudiced and over zealous investigators, the effect of which would be the unjustifiable persecution of many poor victims of tuberculosis, and, as I just suggested, the only proper course to pursue in dealing with this question is by persistently and intelligently educating the minds of the public, as to the exact status of this matter.

Few pathologists at the present day believe in the theory of heredity as a cause of tuberculosis. It is a fact that the offspring of affected parents (especially when the mother) often regularly develop, sooner or later, the disease, but the explanation is to be sought in a general impoverished condition of the organism, as indicated by enfeebled assimilative and nutrient powers, which are quite sure to follow as the inheritance from unhealthy progenitors.

What I have just said in regard to transmission naturally leads to the most interesting and important problem in bacteriology, namely, that of immunity, and I ask your indulgence for a few moments, in order to state the theories at this time held in regard to this subject.

As you are all probably aware, two principal views are advanced to account for the difference of susceptibility possessed by different animals to the same micro-organism, and also that exhibited by the same animal to different germs. I might here state that immunity is of two principal kinds, to wit: *a*, natural, or "inborn;" and, *b*, acquired, or "artificial." The first of the theories of natural immunity is based on the chemical, germicidal properties of the blood-serum and tissue-juices of the body. The second, or "Metschnikoff's theory," attributes the resisting power which an individual or animal may possess to the so-called "phagocytic" action of the tissue cells of the body, more especially the colorless corpuscles, or leucocytes, of the blood.

Metschnikoff believes the presence or absence of immunity depends upon the ability or inability of the cells of the body to devour and destroy the bacteria. Such ability may be natural or acquired. In the latter case, the cells, where they have once had the opportunity of devouring attenuated micro-organisms with a milder poison which nature enables them to withstand, are so far accustomed to it that they can devour the most virulent material with impunity. This can be effected both by gradual adaptation, and also by a kind of selection, in which only the strongest, most vigorous cells remain and transmit the acquired faculty to their descendants. The leucocytes are but short-lived cells. A permanent resistance of the organism to a disease which it has once had, or against which it has been protected by inoculation, is, therefore, only conceivable, if we grant to the cells the power of transmitting an acquired property unaltered to their children, and their children's children. This hypothesis,[1] as must have been seen, presupposes an extraordinary docility in the protoplasm of the white blood corpuscles, to which it attributes something like feeling, thinking, and acting, a sort of mental perception. But if we raise no objection to this, there remain plenty of reasons for combating the phagocytic theory of immunity. In our opinion, the fact that it is essentially the excretions of the bacteria which produce, or are able to produce, immunity is difficult to harmonize with Metschnikoff's hypothesis; for if no living micro organisms are present, none can be devoured, to accustom the cells to the poison and prepare the way for resisting more virulent successors. To overcome this difficulty, it would be necessary to suppose that the reception of attenuated germs acts upon the cells only as a specific stimulant, to which they respond by a functional reaction, and that this stimulating power exists in the same degree, and works in the same manner also, in the bacterical products.

The theory of the germicidal action of the blood-serum, or plasma, is, I believe, supported by more weighty authority than is the ingenious one of Metschnikoff. I have thus forsaken the exact theme of my discourse from a belief that more benefit would be derived from the brief treatment of a subject at best only partly understood by the highest authorities in this branch, but which one who has devoted much time in practical investigations must, necessarily, be better qualified to handle than the average practitioner.

Would the time (and, perhaps, your forbearance also) admit, much profit might be had from the further discussion of bacteria of the mouth, but the vast extent of the subject renders anything but a superficial consideration of it impossible. As yet we are only on the frontier of the domain of bacteriology, and have only obtained a comparatively few facts, or details, of this most interesting and important kingdom. What data and facts investigations into the interior of this boundless area of unexplored territory of micro-organic life will place us in possession of, time, perseverance, and unremitting efforts will prove. We certainly have reason to believe that the knowledge of such points, at present undiscovered, together with their practical application, will be of inestimable value to mankind.

[1] New York Academy of Medicine, February 4, 1892, vide MEDICAL RECORD, vol. xli., No. 10.

[1] Fraenkel: Text-book of Bacteriology, translated and edited by Linsley, p. 146.

Compulsory Vaccination in Turkey.—According to the *Revue Médico Pharmaceutique* of Constantinople, the Turkish Government has decided to make vaccination compulsory throughout the Ottoman Empire.

THE TREATMENT OF SPINA BIFIDA BY EXCISION,

With Report of the Successful Removal of a Lumbar Meningocele from an Adult.[1]

By CHARLES A. POWERS, M.D.,

SURGEON TO THE NEW YORK CANCER HOSPITAL.

W. J. H—— a man aged thirty-five, consulted me in the early part of January, 1891, regarding a tumor of the back. He was afflicted at birth with a spina bifida, the tumor being the size of an orange during childhood. His mother had frequently pricked this tumor during the first years of life, dressing it with a "burnt rag." It gradually grew smaller and gave him no annoyance. Up to the age of twenty-eight he had had no vesical or rectal incontinence, no evidences whatever of any affection of the nervous system, except that after his fifteenth year he noticed that when the clothing or a bandage irritated the tumor, locomotion was somewhat interfered with. At twenty-eight years of age he gradually began to lose power in the legs. The right was affected first, and most extensively, the left being involved later. The heels dragged, and there was dull, aching pain and soreness about the hips, extending down the back of the thigh, this being worse on sitting. Occasionally he had had sharp pains in the loins, hips, and knees, sufficiently severe to throw him down. These came on at irregular intervals, perhaps once a month. Obstinate constipation, occasional attacks of urinary incontinence, at times difficulty in commencing micturition.

Examination.[2]—The patient is a poorly nourished, rather undersized man. He avers that he has never suffered with syphilis, and has never been given to excess in alcohol, tobacco, or sexual relations. He has had long periods of impotence, now has occasional erections. During the past year weakness has invaded the arms; he has some difficulty in raising his food to the mouth, some trouble in writing.

The right upper extremity seems to be affected to a greater extent than its fellow. He has no pains in the arms, but stroking them downward causes a congested feeling in the hands. There is at times a cold sensation across the chest from shoulder to shoulder. About one year ago he would "lose" his arms and legs while in bed, but this symptom has passed away. He has never had cincture feeling, nor cushiony sensation in the feet. He sleeps but poorly. He has had diplopia at a distance during the past year and a half.

Examination of the eyes reveals, in the right, the veins of the fundus dilated; in the left the optic nerves of a whitish, atrophied appearance; pupils small, not immobile.

The walk is ataxic and paraplegic; the arms are very ataxic; sensation to touch is much impaired below the nipple line. The reflexes are abolished.

There is a flattened, Scotch-cap shaped tumor a little to the right of the median line, opposite the last lumbar vertebra. This is thick above, tapering below. It is about four and one half centimetres in diameter, constricted at its base. There is a cicatrix near the apex, and there are one or two areas of superficial fluctuation. There seems to be no deep fluctuation. The tumor has a pulpy, leathery feel. It is only tender when roughly handled.

During several years the patient had been under the care of neurologists in a neighboring city. He was referred by me to Dr. R. W. Amidon, who, after a period of observation during which he administered potassic iodide and spinal cauterization, advised removal of the tumor. Under date of February 18th, Dr. Amidon writes: "While not pretending that the tumor causes the present condition, I am firmly convinced that, as a source of continual sensory irritation, it may much aggravate his spinal symptoms, and that its removal is certainly desirable."

On February 23d, under ether, a vertical incision was made in the tumor. Two or three small, superficial cysts were opened. At a depth of 1.5 ctm., and at about the middle of the tumor, a cavity the diameter of the index-finger was encountered, leading through a somewhat constricted neck to within the spinal canal. A probe introduced through this neck passed easily above and below. The lining surface of the sac was smooth and glistening. The cavity contained a little clear, serous fluid. There was no escape of fluid from the opening which led within the spinal canal.[1] There were no nerves in the sac.

The tumor was removed, the neck of the sac ligated and sewn up with catgut, and the wound closed. A relaxation incision was necessary in order to coapt its edges. Complete primary union followed, and the patient was about on crutches in his usual manner in a moderate length of time.

He returned to his home in Boston and placed himself under the care of Dr. J. J. Putnam, who wrote me on December 16, 1891, that his general condition was better than before operation. He had improved use of the upper extremities, and could balance himself on his crutches to better advantage. Control over the bowels was improved.[2] Mr. H—— insists that the removal of the tumor has been "a source of great comfort."

To sum this case, then, we have: a congenital spina bifida, with a small tumor which gave little trouble in childhood. No nervous element until fifteen years, then slight interference with locomotion. At twenty eight years, development of a progressive ataxic and paretic state, possibly due to continuous irritation of the tumor by the clothing about the waist. Successful and simple removal of the tumor a source of comfort to the patient, and followed by improvement in the ataxic symptoms, which improvement may or may not have been due to this removal [and which seems to have been temporary—see statement of Dr. Putnam, footnote [2]].

It would not seem profitable to describe here the various forms of spina bifida, or the measures adopted for the relief of the affection. Of recorded excisions in adults I am able to find but three,[3] and but one of these seems worthy of special mention. This was reported in the *Lancet* of last year[4] by Mr. H. H. Clutton. It concerns a young woman of twenty-one years, who consulted Mr. Clutton in 1887 regarding a tumor twenty inches in circumference, situated in the median line over the last lumbar vertebra. It had existed since childhood, and had shown steady increase in size until five years previously, at which time it had ceased to grow. It was only troublesome when she inadvertently turned upon her back while lying, but at such times she would have faintness and headache.

There were no paralytic symptoms whatever. The young woman wished to marry and desired removal of the tumor. Mr. Clutton declined to interfere, though the patient repeatedly besought his aid, until three years later. At that time she was worse, anxious to marry if relieved of her deformity, and the tumor showed an increased size. It was removed, an aperture the size of a pencil-case found leading to the spinal canal, a few nerve-filaments about its edges. Some leakage of serous

[1] Read, in part, before the Surgical Section of the New York Academy of Medicine, April 11, 1892.

[2] I am indebted to Dr. Amidon for descriptive notes.

[1] I was unable to thoroughly satisfy myself as to the exact nature of the bony defect through which the neck of the sac passed. So far as I could judge, it was a gap at the site of the right lamina of the last lumbar vertebra.

[2] Since reading this paper I have received an additional note from Dr Putnam, who writes, May 4, 1892, that the pain which was present in the sacral region and buttocks before operation has increased of late, and that the patient seems to be gradually losing ground. The improvement was, then, temporary. Dr. Putnam believes the man to have hydromyelia.

[3] Cases 18 and 26, Table A. An additional case may be found in the report of the London Clinical Society, *vide infra*.

[4] Lancet, 1891, ii., p. 803.

fluid followed the operation, yet the wound healed kindly and the patient went home at the end of six weeks. No paralysis had followed at time of report, one year after the operation.

We see but very few cases of spina bifida in adults, for the reason that the natural course of the untreated disease is a fatal one. Thus, in the exceedingly thorough and painstaking report of the committee appointed by the Clinical Society of London (1885), but fourteen out of sixty traced cases were known to have undergone spontaneous cure. As was well said, however, these figures form a very uncertain guide, as very many infants perish yearly from this trouble whose cases are never recorded, while those who do survive, with or without treatment, are pretty certain to be placed on record. In this way, then, the report of Demme is of greater value. He observed fifty seven cases, and states that of the thirty-two for whom no operation was undertaken not one was alive at the end of two years.

Confronted, then, with such an extreme mortality, one is forced to the conclusion that in suitable cases some procedure must be undertaken with a view to saving life, and is led to weigh the methods which have been proposed. In the exhaustive Report of the London Clinical Society, to which reference has been made, strong commendation is accorded the iodo-glycerine injection of Morton. Seventy-one cases collected by the committee showed a mortality of 38 + per cent.[1] In this report, further, the treatment by excision is condemned as unsafe, though the 7 deaths out of 23 cases give a mortality of but thirty per cent, a death-rate considerably less than that (38 + per cent.) attending the Morton injection.

Since the appearance of this report a number of writers have placed on record cases subjected to excision, and the consensus of opinion of these authors seems to be in its favor. It is evident that it is to be resorted to in selected cases only—cases in which the general condition of the patient is good, in which paraplegia is absent, in which the vertebral fissure is of moderate extent and the communication between the sac and the canal narrow.

In simple meningocele one may remove the tumor, suture together the serous surfaces at the neck of the sac, and close the wound. Under suitable conditions such procedure should not be attended by very great risk, all possible precautions being taken to prevent subsequent "leakage." If the case be one of meningo-myelocele, one may cut off nerves which terminate in the sac, or endeavor to loosen and replace within the spinal canal those which course it. Bayer[2] recommends loosening the muscles on either side the spine, and bringing them together in the median line to strengthen the resistance over the bony gap.

Dollinger[3] has successfully practised osteoplasty, bringing the laminæ together to supply a defect due to lack of the posterior segment of the arch of the fifth lumbar vertebra, and a similar case is reported by Mayo Robson.

Périer[4] reports, five months after operation, a case of lumbar spina bifida, in a baby of seven weeks, cured by Berger (Case 33, table A), who implanted in the spinal gap a segment of bone from a rabbit's scapula. Périer thinks it probable that the bone has been absorbed, but surmises that it may possibly have served as substratum for a firm tissue in which ossification may take place later.

In a most interesting and instructive paper of last year, Bradford,[5] of Boston, reports personal cases of excision, together with a number of other operations which he has been able to gather from literature published subsequent to the report of the London Clinical Society in 1885, the total exhibiting a mortality, due directly to the operation, of 29 + per cent.

To these cases collected by Bradford I am able to add others, making a total number of 34. From these 34 cases 3 are withdrawn in which the cause of death or the result seems indefinite, leaving 31. These present 7 deaths due directly to the operation, a mortality of 22.58 per cent.[1]

TABLE A.—*Cases Treated by Excision.*

No.	References.	Age.	Form.	Treatment.	Result.
1	E. P. Hurd, Therap. Gazette, vol. v., p. 660.	1 year.	Meningo-myelocele.	Excision.	Recovery.
2	Zenenko, Trans. Third Gen. Meeting Russian Med. Assoc., St. Petersburg, Nos. 2-8. (Quoted by Bradford.)	15 years.	....	Excision.	Recovery.
3	Groner, Am. Lancet, 1888, p 284.	3 months.	.....	Excision.	Recovery.
4	Bayer, Prager Med. Woch., 1889, p. 228.	10 days.	Meningo-myelocele.	Excision (after replacement of cauda equina).	Recovery. (Died 2 months later from perforation of cicatrix, "through faulty care at home." Vide Prag. Med. Woch., 1890, p. 49.)
5	Borelius, Hygeia, Sept. 1889, p. 533. (Ref. in Centr. für Chir., 1889.)	10 months.	Meningocele.	Excision.	Recovery. (Death from measles 2 months later, wound not wholly healed.)
6	Bradford, Boston M. and S. Jour., Apr. 9, 1891.	5 months.	.....	Silver-wire ligature, excision.	Death.
7	Bradford, Boston M. and S. Jour., vol. cxiv., p. 169.	5 months.	Meningocele.	Subcutaneous ligature, excision.	Death.
8	Dollinger, Wiener Med. Woch., 1886, p. 15-36.	Child.	Meningo-myelocele. (But few nerves in sac.)	Excision.	Recovery.
9	Bartoo, Lancet, 1886, vol. ii., p. 626.	2 weeks.	Meningo-myelocele.	Excision. (Partial excision of sloughing centre of mass, together with a few nerves.)	Recovery. (Recovered from operation, died in convulsions later.)
10	Willard, Univ. Med. Mag., vol. i., p. 470.	9 months.	Meningo-myelocele.	Excision.	Death.
11	Evans, New York M. Jour., vol. xlviii., p. 205.	6 years.	.....	Excision.	Recovery.
12	Stewart, Brit. Med. Jour., 1891, vol. i., p. 495.	Shortly after birth.	Meningocele.	Excision.	Recovery.
13	Gardner, Med. News, May 16, 1891.	2 months.	Meningocele.	Excision.	Death.
14	Ingalls, Am. Lancet, vol. xii., 1888, p. 284.	3 months.	.....	Excision.	Recovery.
15	Sinclair, Dublin J. Med. Sci., vol. lxxxi., p. 199.	3 months.	.....	Excision.	Recovery.
16	Ceci, Riforma Med., July 8, 1891.	5 years.	....	Excision.	Recovery.
17	Ciuti, Sperimentale, vol. lxvi., 1890, p. 3.	1 month.	Meningocele.	Excision.	Recovery.
18	Klein, Zur Casuistik der Spina Bifida, Nürnberg, 1885. (Op. by Geschell.)	20 years.	Meningocele.	Excision.	Recovery.
19	Picqué, Bull. et Mém. de Soc. de Chir., 1891, vol. xvii., p. 250. (Reported by Berger.)	12 days.	... .	Excision.	Recovery.
20	Hunt, Clin. Reporter, vol. iii., p. 174.	14 days.	.....	Excision by platinum-wire cautery, union of flaps.	Recovery. (At age of 4½ years it is noted: "Child walks, but easily stumbles.")

[1] Morton himself, however, in a later essay claims to have had but 6 deaths out of 29 cases which he injected, a mortality of 20.71 per cent.

[2] Prager Med. Wochenschrift, 1890, p. 49.

[3] Wiener Med. Wochenschrift, 1886, p. 1536.

[4] La Semaine Médicale, May 18, 1892.

[5] Boston Medical and Surgical Journal, vol. cxxiv., p. 354.

[1] Boboff (Centralblatt für Chirurgie, June 4, 1892, p. 465) reports a very interesting case of sacral meningo-myelocele in a boy of eight years, in which he successfully transplanted a segment of bone from the crest of the right ilium to the defect in the sacrum. This case, added to those in Table A, reduces the mortality to 21.87 per cent.

TABLE A.—*Cases Treated by Excision* (Continued).

No.	References.	Age.	Form.	Treatment.	Result.
21	Hoadley, Med. Standard, vol. vii., p. 6.	75 days.	.....	Excision.	Recovery.
22	Bayer, Prager Med. Wochensch., 1889, p. 228.	10 months.	Meningomyelocele.	Excision.	Recovery.
23	Bayer, Prager Med. Wochensch., 1890, p. 49.	A few days.	Meningomyelocele.	Excision.	Death.
24	Ibid	1 year.	Meningomyelocele.	Excision.	Recovery.
25	Ibid	15 days.	Meningomyelocele.	Excision.	Recovery.
26	Clutton, Lancet, 1891, vol. ii., p. 803.	21 years.	Meningocele. A few nerves about the edges.	Excision.	Recovery.
27	Monod, Gaz. des Hôp., March 19, 1892.	4 hours.	.....	Excision.	Recovery.
28	Julaguier, Gaz. des Hôp., March 29, 1892.	26 days.	.....	Excision.	Recovery.
29	Kirmisson, Gaz. des Hôp., March 19, 1892.	Young girl.	Meningomyelocele.	Excision.	Recovery from operation, convulsions later.
30	Ferrier, ibid.....	Child.	.....	Excision.	Death.
31	Prengrueber, ibid.	Child.	.....	Excision.	Death.
32	Wichman, Centralbl. für Chir., May 21, 1892, p. 436.	.....	Meningocele.	Extirpation.	Recovery.
33	Berger, Le Bulletin Médical, 1892, p. 39.	7 weeks.	Meningomyelocele.	Excision (cord replaced, osteoplasty).	Recovery.
34	Powers, Present Communication.	35 years.	Meningocele.	Excision.	Recovery.

Cases 4, 5, and 9 are subtracted, as being indefinite regarding cause of death; leaving 31 cases, which present 24 recoveries and 7 deaths; a mortality of 22.58 per cent. (Cases 1 to 11, inclusive, are from Dr. Bradford's papers.)

For purpose of comparison I have gathered (from the literature of the same space of time, viz., since the Clinical Society's Report) the cases in which Morton's injection was employed. These number 15,[1] and present 4 deaths, a mortality of 26.66 per cent.

TABLE B.—*Cases Treated by Injection.*

No.	References.	Age.	Treatment.	Result.
1	Bishop, Lancet, 1889, vol. i., p. 884.	14 days.	Injection of Morton's fluid.	Recovery.
2	Ibid.	10 days(?).	Injection of Morton's fluid.	Death.
3	Voight, Brit. Med. Jour., 1887, vol. ii., p. 1275.	3 months.	Injection of Morton's fluid.	Recovery.
4	Carver, Brit. Med. Jour., 1889, vol. i., p. 1062.	?	Injection of Morton's fluid.	Recovery.
5	Southam, Brit. Med. Jour., 1886, vol. i., p. 589.	4 weeks.	Injection of Morton's fluid.	Recovery.
6	Ibid	8 weeks.	Injection of Morton's fluid.	Death.
7	Cousins, Brit. Med. Jour., 1886, vol. i., p. 574.	10 weeks.	Injection of Morton's fluid.	Recovery.
8	Lendon, Brit. Med. Jour., 1887, vol. ii., p. 676.	6 weeks.	Injection of Morton's fluid.	Recovery. Child developed hydrocephalus and died 17 months later.
9	Tennant, Australian Med. Gaz., 1888, p. 90.	3 months.	Injection of Morton's fluid.	Recovery.
10	Morgan, Trans. Lond. Clin. Soc., vol. xix., p. 303.	7 weeks.	Injection of Morton's fluid.	Recovery.
11	McNiven, Indian Med. Gaz., vol. xxi., p. 265.	9 months.	Injection of Morton's fluid.	Recovery.
12	Holt, N. Y. Med. Jour., vol. xlvi., p. 519.	15 days.	Injection of Morton's fluid.	Death.
13	Ibid.....	7 weeks.	Injection of Morton's fluid.	Recovery.
14	Snowball, Austral. Med. Jour., 1889, p. 195.	3 weeks.	Injection of Morton's fluid.	Recovery.
15	Morton, Bristol Med. Chir. Jour., March, 1892, p. 14	4 months.	Injection of Morton's fluid.	Death.

Fifteen cases, 4 deaths. 26.66 per cent. mortality.

We thus see that the death-rate attending excision is decreasing, that the recorded cases of the past seven years show a mortality below that attending the injection of Morton's fluid (22.58 per cent. as against 26.66 per cent.) in the cases published during the same time, and but slightly above that in the results attained by Mr. Morton himself[1] (20.7 per cent.).

From these facts it would seem that the conclusions of the Clinical Society's Committee, to the effect that "The plan of treatment by injection is the best with which we are acquainted, and the only one which we feel justified in recommending,"[2] are not at this time entitled to being considered authoritative.

The treatment by excision must certainly be thought the most rational, the most scientific. Improvement will follow more careful selection of cases, the choice of an appropriate time for operation, and added knowledge in technique. The results thus far attained are certainly encouraging, and lead to the belief that the operation is one which will find added favor in the future.

[1] I do not doubt that it has been used in many other cases, these are all which I find recorded.

ON THE USE OF IODINE TRICHLORIDE IN SURGERY.

PRELIMINARY COMMUNICATION.

BY WILLIAM T. BELFIELD, M.D.,

CHICAGO, ILL.

LAST fall there appeared, in reports of bacteriological work from Berlin, certain allusions to the trichloride of iodine which induced me to investigate this agent clinically. The results are such as to require me to call attention to the apparent value of this substance in arresting the two bacterial processes most commonly met by the surgeon—tuberculosis and suppuration.

Since the trichloride has as yet no place in the Materia Medica, a word as to the substance itself seems appropriate: it is, as the name indicates, a simple compound of iodine and chlorine (formula, ICl_3) made by passing chlorine gas over iodine; the result is a reddish crystalline substance emitting an odor of chlorine. It dissolves in its own weight of distilled water, and almost as readily in alcohol; either of these solutions mixes freely with glycerine in any convenient proportion. Though a union of two closely allied elements, it is a stable compound; I have kept the crystals and various solutions for five months unchanged.

When a few drops of a solution of the trichloride fall into normal urine, instant decomposition ensues, both chlorine and iodine being liberated in a nascent state; a deep brown color (iodine) and bubbles of gas (chlorine) at once appear, while a mixed odor of the two elements becomes plainly perceptible at the mouth of the tube. To my colleague, Dr. W. S. Haines, Professor of Chemistry and Toxicology in Rush Medical College, I am indebted for the demonstration that this reaction is caused not by any of the urinary salts, but by an organic constituent of the urine, probably mucin. This clue led to the revelation that the same decomposition is effected by contact with any animal matter in solution—including pus, blood, saliva, infusions of meat, etc. The extreme sensitiveness of the trichloride to animal matter compels the use of distilled water for its solution; since ordinary hydrant water (though Chicago water is by no means the vile fluid pictured in certain Eastern papers) decomposes the compound in a few minutes.

The well-known bactericide properties of both chloride and iodine suggested, *a priori*, the surgical value of the substance which liberates each of these elements in its nascent state upon simple contact with the tissues. I have made tests with different bacterial cultures, and find, for example, that a one per cent. aqueous solution rapidly sterilizes cultures of the ordinary pus-producers—staphylococcus and streptococcus. Yet we have learned by experience, particularly Geppert's revelations concerning the bichloride of mercury, not to transfer deductions from the test-tube to living tissues. Satisfactory

[1] The Treatment of Spina Bifida by a New Method. London, 1887, p. 212.

[2] Clinical Society's Transactions, vol. xviii., p. 385.

proof of clinical value must be furnished on these tissues directly.

During the past six months I have used the trichloride, at first occasionally, later continually. The cases may be summarized as follows :

1. *Surgical Tuberculosis.*—Iodine with its compounds has long been the surgeon's chief remedy for local use against tuberculosis ; I therefore expected decided effects from the trichloride in these cases, and have not been disappointed. Of a considerable number so treated, comparatively few can be adduced as proof because in most of them guaiacol was also administered internally ; since the latter is an unmistakably powerful agent against surgical tuberculosis—as I know from a year's experience with it—the benefit derived from the mixed treatment cannot be ascribed solely to the trichloride. The following cases were, however, treated with the trichloride alone : Two of bladder tuberculosis (diagnosis confirmed in one case by presence of the bacilli, in the other by discovery of a distinct ulcer) ; 2 of epididymis tuberculosis with fistulæ (the latter rapidly closing under hypodermic injections, for the first time in years) ; 1 of tubercular abscess of prostate ; 6 of suppurating tuberculous cervical glands ; 2 of tuberculosis of knee-joint in children ; 1 of tubercular empyema.

2. *Suppuration.*—A miscellaneous line of cases, including infected wounds, abscesses, and malignant ulcerations.

3. *Ammoniacal Cystitis.*—Six cases caused by retention from prostatic enlargement.

4. *Venereal Sores.*—A detailed account of individual cases would be out of place in this communication ; the results may be summarized in the statement that, in a reasonably extended experience and observation, I have never seen tuberculous processes so rapidly subdued by iodoform, nor suppuration by hydrogen peroxide, iodoform, or any other agent.

These cases are too few to be conclusive; yet the uniform and unusually rapid effect warrants the presentation of the trichloride for extended trial. It seems to combine the valuable properties of iodoform and hydrogen peroxide, with advantages over each peculiarly its own ; it appears more energetic than iodoform in arresting processes dependent upon bacterial agency, both suppurative and tuberculous ; it is soluble in water, and hence capable of hypodermic use as well as of gradation from innocuous dilution to caustic effect. Incidentally it is cheaper and far less offensive to the nostril. Over the peroxide it has the advantage of stability prior to use ; prolonged contact with the tissues; the power to sterilize not only pus, but all moist animal matter ; and adaptability to use on gauze.

Its disadvantages as compared with these agents are its caustic properties in strong solution, and the deleterious influence on instruments and clothing. Doubtless iodine intoxication could be induced by large quantities, but no instance thereof has as yet occurred to me.

I have employed it in the following forms : For hypodermic use, one-tenth to one-half per cent. solution in distilled water alone, or water four parts, glycerine one part. (In experiments on animals I have seen sloughing follow the hypodermic use of a two per cent. solution.)

For instillation of deep urethra and irrigation of bladder, and for injection of serous cavities, the same solutions. For suppurating wounds, irrigation with one to five per cent. solution in water, either alone or with glycerine. For putrid surfaces (cancerous), venereal sores, etc., five to twenty per cent. solution in equal parts of water, glycerine, and alcohol.

Solutions stronger than five per cent. usually cause decided smarting in ordinary wounds. The crystals are caustic to denuded surfaces. Gauze sterilized by boiling, immersed in one to ten per cent. aqueous solution and dried, retains the compound for an indefinite time.

PRIMARY CONSECUTIVE AMPUTATION AND RESECTION IN TRAUMATISMS OF THE EXTREMITIES.[1]

By THOMAS H. MANLEY, M.D.,

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In a former period the rules governing the time at which an amputation should be performed were precise and definite. There was, however, a cardinal distinction recognized with regard to the circumstances under which the injury was sustained, whether it were in military or civil life. Since the discovery of constitutional anæsthesia and improved methods of dressings, a marked revolution has been wrought in the management of such crushing, disorganizing injuries of a limb as may give rise to the question of amputation. Ollier, in his extensive experimental and clinical researches and observations, has discovered that the young healthy bone possesses great regenerative power, and that the field for practical osteoplasty in traumatisms involving the bones was a very large and fertile one. It was, besides, demonstrated by Lister, that by the employment of chemical solutions septic infection could be often prevented. The outcome of all this has been that the necessity for complete disseverance of a limb at present seldom arises.

My purpose on this occasion is to describe the conditions under which a primary consecutive amputation or resection should be performed in serious injuries.

I have elsewhere stated, and now reiterate it, that a primary amputation should never be resorted to in civil life unless all the important structures of the injured limb have been thoroughly destroyed ; when the knife is employed simply and solely for the purpose of completing the detachment of the fibres which hold the parts together.[2] When the parts are extensively shattered, yet one is in doubt as to the vitality of the distal tissues, nothing is lost by waiting. In a city like ours, so extensively covered by iron rails, where the number of the injured who have been run over is annually increasing, this conservative course of delay is of infinite value. For, when one has been brought into the hospital after having been run over on the street, it very often is utterly beyond the power of any surgeon to then estimate just how much has been destroyed, or where the precise line of demarcation will form. Certainly in those compound shattering fractures which open into joints, or involve the thigh, there will be little hope of gaining anything by delay ; but in the growing child, with resection of the joint, a fairly useful limb might be secured.

A classical primary amputation, then, should not be practised except in very rare cases. The principle of preservation must be constantly kept in view in these disorganizations of the extremities from accident. But is not our patient exposed to great danger by a considerable delay, through hemorrhage, pain, infection, or gangrene? Practically none, when proper precautions are observed. With an extensive experience in this class of cases for the past ten years, I have never seen a single case in which any ill-effects occurred in consequence of waiting. There is a class of cases, however, in which everything is thoroughly and completely destroyed at, and beyond, the seat of injury, where there is no contra-indication to an immediate amputation.

The ordinary text books on surgery have a certain set of rules for one's guidance in amputations. These have a limited range of application in pathological conditions requiring the disseverance of a limb ; but in extensive traumatic disorganizations they are wholly useless. In those primary amputations there is no guide like experience in enabling one to secure a useful flap. In spite of every precaution the overlapping integuments will slough in varying degrees, at times leaving a wound which must heal by granulation, or, possibly the bare, denuded ends

[1] Read before the Surgical Section of the New York Academy of Medicine, February 8, 1892.

[2] Resection as a Substitute for Primary Amputation, New England Medical Monthly, October, 1891.

of the bone may ultimately require a future resection. But most lamentable of all are those in whom we may secure prompt primary union and an artistic but useless stump.

In consecutive amputation after injury we can usually proceed on quite precise lines. The patient has now survived the shock, the circulation is re-established, the muscles have recovered their contractility, and we are in a position to select such a form of flap as may seem most desirable. It may be well, however, to note a few peculiarities here about flap- or stump-making in a general way. We know that the flap which is completely freed from its muscular connections is less apt to retract and give rise to a painful, sensitive stump through tension on the end of the bone. But in the feeble, or with those whose circulation is languid, this cutaneous flap is very prone to slough. The muscular, on the contrary, is the most vascular and may be depended upon to amply nourish the periphery. To overcome the immediate tendency to active muscular contractions, adhesive straps should be employed, which should be so adjusted as to press the redundancy of muscular tissues in the direction of the stump.

These measures should be continued until thorough reaction, with fatty interstitial degeneration of the fasciculi, is established and atrophy has commenced. Since the antiseptic era, until the reaction set in against the new doctrine, the aim of the operator has been to secure primary union, after consecutive amputation particularly; to favor the absorption of the detritus, which results from an extensive laceration and contusion of living tissues, rather than in the times which antedated this period; to effect their elimination through a vent in the wound, by drainage and moderate suppuration. This has been accomplished by the substitution of one irritant for another, or chemical for an atmospheric irritant; for every antiseptic solution worthy of the name is a positive irritant, and is a foreign substance. The soft parts manifest a singular tolerance for those irritants, but on the osseous tissues they often act with a destructive energy. This is the reason that periostitis, osteitis, and osteomyelitis have so often supervened in those aseptic stumps.

I once had a female patient, on whom I first performed an ankle-joint amputation. Result, prompt union, handsome but useless stump. Second amputation in a year, just below the knee-joint, rigorous antisepsis. Result, primary union, prompt, but a painful, sensitive stump, requiring the constant use of morphine. Third amputation, lower third of the femur, no antiseptics, but an abundance of sterilized water employed. Result, union with a little suppuration, but a non-sensitive, comfortable, useful stump. So convinced am I of the general baneful influence, particularly, of mercuric solutions on living osseous tissue and bone marrow, from many observations, that at the present time, unless purulent or putrefactive processes are present, I employ none of them. The drainage-tube, for a few days after amputation, serves a useful purpose. In many cases, however, its presence excites an irritation, so that, as a routine custom, drainage should not be employed in amputations. The abundant, fluffy, absorbent dressings of Samson Gamgee are of inestimable value in amputations, by exercising a moderate pressure over the wound, maintaining a uniform temperature, excluding irritants, and absorbing the residue of inflammatory products.

Resection in traumatisms of the extremities which extensively involve the bones, is an old expedient in surgery, but it was never very extensively employed until the present century. Experimentation on the osseous system of anæsthetized animals, and opportunities to proceed with leisure and deliberation on unconscious man, have greatly widened the range of osteoplastic operations.

Osteoplastic procedures are particularly applicable in that class of cases in which in former times prompt recourse to amputation was the rule. As examples, I may be permitted to mention two of the many very aggravated cases in which the expedient was successfully resorted to by myself. In one, the upper fourth of the humerus was shattered into a score or more of fragments by a heavy charge of buckshot. Patient, man of thirty; immediate resection; recovered with false joint, but so useful a limb, that he has been able to follow his usual trade as a carpenter since he left the hospital. In the other patient, lad of five years, the whole of the tibia was shattered and shelled out of the periosteum, from knee to ankle, its periosteum and both articular heads remaining. The fibula sustained two fractures also. Resection, immediate. Result, entire regeneration of the lost tibia, and so much functional restoration that he now walks with scarcely a limp. From these extremes I have, very many times, substituted resection for primary amputation in nearly all the bones of the extremities from the phalanges up, except the femur. This is the one bone of the extremity which will not tolerate manipulation with impunity; hence, in compound, comminuted fractures of it, when the system is in condition to bear it, amputation should be promptly performed.

In those extensive, shattering lesions of bones which open widely into joints, excision of the destroyed bone, though, perhaps, entailing the sacrifice of an articulation, may often leave a limb infinitely more valuable than any artificial substitute; but this is a surgical expedient attended with great danger to life.

Resection or excision is to be substituted for amputation in the following classes of cases: 1. In every injury of the extremities which entails extensive mangling of the tissues, with disorganization of osseous substance, in the child and growing youth. 2. In all cases of compound, comminuted fractures of the phalanges, the carpus and tarsus especially, in the healthy, vigorous subject. 3. In those extensive mechanical lesions of the bone and soft parts, in which doubt remains as to the presence of vitality.

It is well known to experienced surgeons, that children bear the shock of amputation and loss of blood very badly. True, ether anæsthesia stimulates the vital forces for the ordeal and paralyzes the sensory reflexes. But, notwithstanding this, in not a few cases reaction fails to become established and mortal collapse follows.

The Esmarch bandage has contributed somewhat to diminish the loss of blood in amputations for pathological conditions, but in serious traumatisms there is often great loss, and the patient is exsanguinated before assistance arrives. Or, if this has not been so, in the highly vascular tissues of youth, after the amputating-knife has severed the parts and the main blood-trunks have been ligated, the rubber constrictor is slackened, when the blood-wave is let on. Now, if the divided surface be of considerable area, blood oozes from every direction unless cardiac syncope is present; and, in spite of anything that may be done, there may be an irreparable and mortal hemorrhage.

Exclusive of these immediate dangers attendant on juvenile amputations there are other cogent reasons which should serve as an incentive to us to strain our energies in the direction of conservatism. They are, a knowledge of the wonderful recuperative power in children; of the fact that the regenerative energy inherent to their osseous tissues is peculiar to early life, and justifies us often to not only hope for, but promise, results which it would be futile to look for at or after middle life. The preponderance of inorganic elements, their thick vascular periosteal envelope and relatively small quantity of medullary matter, all, in a large measure, explain the *modus operandi* of regeneration in youth.

In extensive disorganizing lesions of the fingers, toes, or body of the hand or foot, no thought of immediate amputation should for a moment be entertained, unless the injury itself has effected the complete destruction of the part, when we complete their severance with scalpel or scissors. But they may be cold and bloodless.

This is no contra-indication to conservative measures; for the temporary frigidity of the parts often arises from shock; when, as the cardiac stroke increases in force, natural warmth returns. Not the smallest portion, then, should be sacrificed in these regions in which it is possible to spare it. Resection here permits us to undermine the soft parts with the rongeur, and detach as much bone as is necessary to secure an ample investment for what remains.

Manual autoplasty by désossement (the unboning of a finger), as practised and taught by Dr. Guermonprez, of Lille, France,[1] must be regarded as one of the greatest triumphs of modern surgery, for by it hands may be made useful and feet spared, which heretofore had to be sacrificed, or, if retained, were useless and unsightly.

In that large group of cases in which we find, immediately after accident or wound, that the circulation has wholly ceased, and we are not certain but the disorganization may be so general that little need be looked for from delay—here, indeed, unless the parts are totally destroyed, we may open through the benumbed, senseless integuments or connective tissues, lift out all free, detached spiculæ and fragments of bone, secure the vessels, place the limb in a comfortable adjustment, and be guided in our final conduct of the case by events which speedily follow after reaction is announced.

Technique of Resection in Traumatisms.—Resection in traumatisms, unlike that in pathological conditions of the bone, is not limited to the osseous tissue alone, but to all that have parted with their vitality. Thus, in the one the rule is to cut away until dense, vascular bone surface is reached; in the other, where there is no diseased, but physically disorganized bone in varying degrees, so much only should be removed as is wholly freed from its periosteal and muscular attachment, which by its presence acts as a foreign substance; besides, such sharp, projecting ends of the shafts as may, by imbedding themselves in soft parts, give rise to irritation and suppuration. The soft parts which have shared in the destruction and are reduced to a pulp, should be stripped away. In a general way I have found the employment of silver wire, in maintaining approximation of the fragments, of little value, necrosis often following its employment, and, when consolidation supervened, more than once the apparent osseous union proved a delusion.

After carefully preserving every remnant of the periosteum possible, deep sutures are inserted, and over fluffy dressings a layer of gypsum is applied. Healing is by granulation, and, as the breach in the parts is left open for the residue of the secretions, no tubing is inserted.

In the healthy, non-contaminated recent wound, no sort of antiseptic solution is employed. Homœoplastic osteoplasty, as taught by Ollier, is of infinite value in many of those shattering, open fractures. The following conditions are necessary for its success: First, with respect to the patient, and next as regards the bone fragment or fragments themselves. The patient must be young and healthy, and be assured perfect quiet for some time following operation. It is indispensable that the bone about to be restored possess the greater part of its periosteal investment, and that there be a contiguity of an ample vascular supply, with a sufficiency of a remaining muscular or connective-tissue attachment.

Where these conditions are present we may hope for coalescence of one or many fragments, and the practical restoration of a shaft or bone. When they are not, then our best efforts at regeneration or restitution will be futile. The re-introduction of a piece of bone completely denuded of its periosteum, bone triturate, or bits of periosteum, in my experience and from what I can learn by personal observation in the practice of others, are of no use whatever. The application of heteroplastic implantation of bone after extensive resection or loss, although many times resorted to, has generally failed; hence many of our ablest and most modern observers seldom mention, except to condemn, it.

The dangers which may follow resection or delay for consecutive amputation, are more theoretical than real in civil life. They are of a description which may be witnessed after any primary amputation.

If effectual hæmostasis be secured, secondary hemorrhage may be always prevented. High inflammatory action may arise, in spite of us, in the syphilitic, tuberculous, or scorbutic, and in malarial districts, if the system be not well fortified by proper constitutional remedies. Septic inflammation may be prevented by the rigid observance of antiseptic or aseptic measures. Tetanus is a rare complication; I have never seen it in this class of cases; nor does it appear that there are any known means to effectually forestall its advent when it is about to invade the system.

Gangrene or mortification in a certain proportion of cases we await. After the lapse of two or three days, according to the activity of the general circulation, gangrenous processes will often, with precision and distinctness, map out the necrotic areas of tissues. When mortification, the complete death of everything is clear, we may then amputate through those parts which have preserved their vitality, and not subject our patient to the dangers of a secondary operation, which may be the case when we cut at an earlier date.

Conclusions.—I. Primary amputation in civil life should never be resorted to in the young, growing subject; nor in the adult, only under very exceptional circumstances; as, when the physical force of violence itself has been so great as to effect total destruction of the part, and the scissors or scalpel is employed to complete the work of division, that the dead may be separated from the living.

II. When a limb or part of a limb must be sacrificed, a consecutive amputation offers the best prospects of survival from shock and a stump less prone to slough, than immediate severance in contiguity of mangled or fatally damaged structures.

III. Resection, in connection with osteoplasty, should be adopted as a general substitute for primary amputation, for by its intelligent and general adoption our patient's prospects are not imperilled, and very much may be saved which has heretofore been sacrificed.

IV. With respect to amputations in general, the ancient doctrine cannot be reiterated with too great emphasis, viz., to sacrifice nothing which may be spared, whether a phalanx metacarpal or metatarsal bone; one of the tarsus or carpus; to spare the joint, no matter how insignificant it may be in function, and never penetrate an articulation if the smallest part of the shaft can be spared.

V. Hot water or solutions of bichloride of mercury should never be employed in resections or amputations through living tissues; for the bone substance is extremely intolerant of either; hence, though the stump promptly closes in, they may have laid the ground-work of an osteomyelitis, which, in the near future, will make a secondary amputation imperative. In those foul, infected tissues, arising from neglect before resection or amputation, and in which we must employ some disinfectant, we should not neglect, after using the corrosive solution, to always follow it by a thorough drenching with pure, sterilized water, with a view of washing away any residue or excess of this powerful irritant that may linger in the wound.

NOTE.—Dr. Manley, after reading his paper, presented seven patients, on whom various operations in the way of resections and conservative surgery, on the upper and lower extremities, had been performed.

[1] Gazette Hebdomadaire de Médecine et de Chirurgie, October, 1891.

Œsipus, the crude fat from which lanoline is extracted, has come into use in dermatology. It is hard and has a bad odor, but the one objection can be overcome by adding sweet oil, and the second by some aromatic.

A TEST REACTION FOR THE CULTURE OF THE MICROCOCCUS PYOGENES AUREUS.

By W. M. L. COPLIN, M.D.,

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AND

D. BEVAN, M.D.,

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We have discovered, quite accidentally, that if culture media be made after the following formula, a very definite reaction takes place when inoculated with the micrococcus (staphylococcus) pyogenes aureus. The culture-medium which we have been using in the laboratory for a considerable time in the cultivation of micro-organisms is made as follows:

℞. Meat extract	5 grms.
Peptone, dry (albumin)	10 grms.
Glycerine	62 grms.
Water	1 litre.

To this add agar 1.5 per cent.

Methods for filtering and clearing are the same as in the preparation of other forms of culture-media.

If upon this medium a scratch-culture be made from a growth of the micrococcus pyogenes aureus, it will be found that on the second day after the inoculation the growth of the organism will be manifest; that on the third or fourth day the substratum will begin to become opaque, and by the end of the fifth or sixth day the entire mass of culture-medium will assume very much the appearance of having tapioca intermixed with it. It will be an opaque white, uniform almost throughout the entire medium, except that it will be most dense near the surface, with diminished density as we proceed toward the bottom of the tube. It can readily be proven, by lateral cultures and by cover-glass stains, that the change in appearance is not due to the development of the micro-organism in the deeper layers, but results from some chemical alterations induced, probably, by the microbic alkaloid. So far as we have been able to observe, and we have used the medium for nearly all cultures, the change only takes place in the presence of the micrococcus (staphylococcus) pyogenes aureus and the micrococcus tetragomus, in the latter to a much less degree than in the former. The mixture of several organisms does not seem to change the character of the reaction, so that for the determination of a mixed culture this "pearly white reaction," as it may be called, will be found very significant.

This report may be considered as preliminary in character, as we hope to work out the chemistry of the reaction, and, if possible, find out whether it is an alkaloidal precipitate or a metabolic product.

Laparotomy.—There is at present, says the *British Medical Journal*, a big "boom" in laparotomy in the United States. In New York an "eminent hand" reported two hundred laparotomies performed by himself last year. A country doctor reported thirty-five in one year, and a young doctor in a town of three thousand inhabitants compiled the respectable total of seventy-two in seventeen months. One operator in Detroit thinks nothing of two laparotomies in a day, and lately made a break of three. Rival laparotomists compete with each other, and, if statistics are to be trusted, such hecatombs of ovaries must be offered up on the altar of the New Surgery as might well make American patriots feel some anxiety about the population question. A lady laparotomist has appeared in Michigan in the person of Dr. Florence Huson, of Detroit, who recently operated successfully in a case of ectopic gestation.

The *Journal's* item is, we think, a little belated. It would have been more true three years ago.

A CASE OF TOXIC CENTRAL AMBLYOPIA TERMINATING IN PROGRESSIVE ATROPHY; WITH GENERAL CONSIDERATIONS.[1]

By ALFRED HINDE, M.D.,

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J. L. G——, aged thirty eight, Canadian, cooper by trade, married, free from venereal infection, has been a beer-drinker to excess for about six years, and would smoke daily from one to two ounces of fine-cut tobacco. During the past two years he has been a great sufferer from dragging pains in different parts of the body. They were "very distressing" in the lower extremities, especially on deep pressure over the posterior surfaces, so that during nine weeks, one year ago, he could not sit down on a chair, and, in order to sleep, he had to rest in the prone position of the body. He had also severe head pains of the same sudden, pulling, steady character. These pains were worse at night, and markedly intensified after each drinking-bout.

During the periods of most intense pain, for two years past, he has been in the habit of relieving, temporarily, his suffering by the internal and local use of alcohol and water. The pains are least severe in warm weather, and during summer time he needed less alcohol than in the winter months.

There is present a marked tenderness on deep pressure over the large nerve-trunks—sciatic and musculo-spiral. He lacks general nervous tone, and his weight five years ago was one hundred and eighty pounds, but now it is about thirty pounds less. He considers that he has been sexually intemperate during the last five years.

About six months since he first noticed that his vision became slightly foggy, and from then until the present this fogginess has become more and more intense, so that now he can see objects somewhat better when not looking directly toward them, or "out of the side of my eye!" With the right eye alone he reads $\frac{12}{cc}$, and with the left only $\frac{1}{cc}$, and glasses do not improve vision. With both eyes he reads only No. X. Snellen at five to seventeen inches. All objects are befogged and must be seen at a nearer point, or at a greater angle—hence of larger size—than is required by eyes having normal vision. The external ocular muscles are healthy, and the intra-ocular muscular apparatus is normal so far as the above range of accommodation is concerned. The pupillary reflexes, direct and consentaneous, are quite torpid, whereas the accommodative[2] reflex is present and much more acute than the others. The pupils are of medium size.

The eyeballs have a healthy appearance and the media are clear. The outer halves of the optic papillæ are much paler than the inner and whiter than normal, and their surfaces are somewhat depressed. The arteries of the retina appear of about normal size and color.

The visual fields are found to contain a central area in which objective vision is markedly impaired but not lost. This scotoma is symmetrically situated in each field, is of oval form, involves the macula, and extends horizontally to the blind spot of the optic nerve entrance. Outside of this central amblyopic region the visual field is more nearly normal, until we reach its periphery. The

[1] Patient shown and paper read before the Rush Medical College Class, at the Neurological Clinic, February 25, 1892.

[2] The impairment of the direct and consentaneous reflexes is most probably due to the anæsthetic condition of the *afferent* optic nerve-portion of the iritic reflex arc, the nuclei of the third nerves and their trunks, the efferent part of the arc, remaining normal. The presence of the accommodative reflex, an associated movement, is most readily accounted for by the fact that the requisite nerve-stimulus for convergence of the eyeballs through the volitional internal recti muscles necessitates a simultaneous explosion from the nuclei of the avolitional sphincter irides and ciliary muscles, because of the interconnection of the three nuclei in the floor of the third ventricle and the aqueduct of Sylvius. These nuclei constitute almost an independent centre with its separate blood-supply, and, together with their branches, as above given are the active mechanism in the production of the Argyll-Robertson pupil wherever found.

right field is peripherically contracted at its upper and nasal limit. The left field is contracted somewhat at its nasal boundary. His color perception is generally impaired—most for greens (appear dark to black), next for reds, then yellows, and least for blues—though he makes mistakes in the grouping of shades of all the above colors.

He has noticed that his vision is worse when the eyes are exposed to a bright light, as on sunny days and at mid-day, more than in the morning and evening, or on cloudy days. He sees very slightly better, on testing, with his back to the light, than when the luminous rays strike the eyeballs.

In ascertaining the history of this patient he first said that he was no whiskey-drinker, and yet, with the peripheral pains, the nerve-trunk tenderness, and the marginal limitation of the visual fields, it was difficult to explain these facts by means of nicotine poisoning alone, and beer had an insufficient amount of alcohol to produce them. Only on further questioning did he admit the ingestion of diluted alcohol as an anodyne.

From the foregoing we are led to a diagnosis of central amblyopia dependent upon a toxæmia due to tobacco and alcohol. The case is a severe or advanced one of tobacco-amblyopia with the added factor of a progressive atrophy, as shown by the extensive involvement of the color sense, and the commencing limitation of the visual fields, together with a peripheral alcoholic neuritis, that preceded the eye symptoms, and continued with them.

The amblyopia due to tobacco is not as much dependent upon the amount of the weed used as upon individual idiosyncrasy. The fine-cut or shag tobacco of the stronger varieties is the most likely to produce the eye-symptoms. Heredity would seem to play a part, for male smokers in a family have been known to be affected, and in these same families some of the women at the climacteric period have been known to develop optic nerve atrophy. Locality and nationality may affect results, for Hutchinson observed that strong tobacco was the controlling drug in these cases in England, whereas, in Germany, Uhthoff [1] found that alcohol played a greater etiological part in the production of "amblyopia."

As might be surmised, the male sex is almost alone in this disease. In Hutchinson's early observations of 69 cases, 4 only were women, and he noticed that persons who learned to smoke with difficulty and those who were especially prone to sea sickness were frequent cases in his group of central amblyopes supposed to be suffering from tobacco-poisoning.

The affected are usually beyond thirty years of age, and rarely have cases been reported in total abstainers [2] from alcohol, and youths have been known to be the subjects of the disease. Again, save in very advanced cases, the evidence in favor of tobacco, as against alcohol, in the causation of the disease, is supported by the fact of the gradual and often complete recovery of such cases on the withdrawal of tobacco, without other treatment.

It is, however, rare to find cases of central amblyopia in smokers who are water drinkers. The large majority are persons who have used tobacco and alcohol to excess and who have lived an otherwise depraved life. Yet, the numerous alcoholic neurotics of this clinic are generally free from dependent eye-symptoms. After years of observation in these cases, and in a few cases of women drinkers, who were not smokers, yet sufferers from general neuritis, I have yet to see the first case of typical central amblyopia.

This would indicate that the connective-tissue inflammation of the optic nerves is much less frequent than inflammation of the same tissue in the spinal nerve-trunks—which accords with clinical observation.

[1] Uhthoff (as quoted by Noyes, Diseases of the Eye, p. 618) in one thousand cases of alcoholismus found six per cent. affected with "amblyopia"; and about thirty per cent. of the one thousand cases had eye symptoms of different kinds.

[2] Among others, Noyes (Diseases of the Eye, 1890, p. 619) reports one case in an artist who "never drank wine nor liquor, but smoked constantly."

In chronic alcoholism the cerebral meninges are markedly thickened from connective-tissue proliferation, and the optic nerve-sheaths are but a prolongation of these, with a reduced blood-supply. Because of the greater distance from the central supply of alcohol, and the relatively smaller blood-supply, and, may be, more complete oxidation of the drug, the less frequent optic viditis may be partially explained. Yet without the alcoholic soaking of the optic nerve tissues, I believe that tobacco alone would as rarely produce interstitial optic neuritis, as much as it fails to inflame the other nerves of the body. Nicotine may have a predilection for the optic nerves, but these cases are most often due to a mixed poisoning.

Again, did we possess the delicacy of exact limitation in the early stage of the spinal neuritis, and know exactly the location in the nerve-trunks of the first-affected fibres, as we do in the optic nerves, there would be little surprise if we learned that the extension of the inflammation spread from the already inflamed sheath first to the outermost fibres of the bundle, as occurs in these optic nerve inflammations.

This probable course would again show the etiological part played by the alcohol, yet we must confess the immunity shown by the comparative rarity of the optic nerve affection, save where tobacco has also been used. The escape of many chronic alcoholics from general neuritis only demonstrates the invulnerability of many persons against the toxic effects of alcohol, a parallel to the chronic smokers who escape a central amblyopia. If the early progress of the two forms of neuritis—special sense and ordinary sensory nerve—should be the same, we can the more easily understand the equally favorable early prognosis in both varieties. Both are peripheral neuritides, and the fact that the optic nerve cannot express a pain, but can only flash a light, is the reason for the principal difference in the treatment of the two forms—one cries for an anodyne, the other does not.

Not considering violet, the color having the smallest area of recognition in the normal retina is that of green; then red, yellow, and blue, in order, have larger fields. The impairment of color-perception, in pathological conditions, is first noticeable for green. If the disease progressively occupies a still larger extent of the nerve or retina, the next color imperfectly recognized would be red, then yellow, and lastly blue.

This general diminution of color-perception, as present in our patient, indicates an extensive involvement of the nerve, and in such a case the optic disk would usually show signs of atrophy, as a rule, occupying its temporal half—also present in our case.

In the early history of central amblyopes, the ophthalmoscopic examination is entirely negative, even the optic papilla has a normal appearance. At this period the pupillary reflexes are usually acute, hence the improvement of vision in such cases is marked where the direct light rays are thrown upon the test types, the eyeballs at the same time being shaded from the intense light. The consequent enlargement of the pupil permits the excitation of a greater area of the retina by the increased number of ethereal vibrations admitted to the interior of the eyeball. The same improvement in vision follows the use of a weak mydriatic solution that affects the sphincter iridis muscle only.

In some cases the acuity of vision is increased temporarily by the inhalation of the fumes of nitrite of amyl to its physiological effect, and it may be used to aid in the rapid, differential diagnosis between cases largely functional and those severer ones where atrophic change has supervened. Increased flow of blood to the optic tissues, from the occipital cortex to the macula, most probably causes the momentary stimulation of the still intact nerve elements.

These much-debated cases are not freed from discussion when their morbid anatomy is considered. The pathology of central amblyopia, as already outlined, is

that of the other toxæmiæ,[1] viz., a peripheral interstitial neuritis. The anatomical explanation for the central scotomata is that of a retro-bulbar affection of the optic nerve fibres that are distributed to the central area of the retina, at first a specifically localized disease of the optic nerves within the orbit. The exact location, in the optic nerves, of the nerve fibres supplied to the macular region, and between the latter and the papilla, and to the peripapillary portion of the retina—the seat of the central scotomata—is in the outermost parts of the optic nerve-trunk next to its sheath. An inflammation of the sheath of the optic nerves with its extension to the connective-tissue partitions, especially of the peripheral temporal portion of the nerves, would readily account for the phenomena of these interesting cases. The diseased portion would include about one-third of the optic nerve fibres, and is most probably at first entirely a functional impairment due to exudative causes, followed at a later period, if the etiological conditions persist, by a pressure atrophy of the nerve fibres, and still later, in some cases, by a progressive inflammation with subsequent atrophy of other portions of the optic nerves.

Some observers have regarded these cases as due to an interstitial neuritis of the axial fibres of the optic nerves. Some consider, and with these we agree, that the fibres of the papillo-macular regions only occupy the central portion of the optic nerves behind the orbit, but that within the latter, and as we approach the eyeball, they lie nearest to the sheath and largely on the temporal side of the nerve; whereas, it is known that the axial fibres within the orbit are spread out in the anterior portions of the retinal expansion, and these parts are not included in the early period of central amblyopia. In our patient, however, they are involved, hence the case has passed beyond a pure one of central scotomata to that of a progressive affection of the optic nerves, and renders the prognosis graver, because of the probability of serious, progressive, and permanent, but not necessarily complete, blindness. In this patient, if we were asked for the immediate anatomical limitation of the disease that would explain the atrophy of the temporal halves of the papillæ, the central scotomata, together with the marginal or peripheral nasal and superior contraction of the visual fields, we would reply that, after the initial inflammation of the optic nerve-sheaths the disease extended especially to the distal temporal portion of the peripheral fibres of the optic nerves, and that the interstitial neuritis, with its base outward and its angle inward toward the centre or axis of the optic nerves, has now reached the axial fibres, and these being affected explain the peripheral contraction of the inner and upper margins of the visual fields; in short, a more or less definitely wedge-shaped neuritis, with its widest part next the temporal portion of the sheath and its apex at the centre of the optic nerve-trunk, and situated immediately behind the eyeballs.

The prognosis in these cases depends upon the chronicity of the disease, the willingness of the patient to entirely forego his bad habits, for many of these cases, as Mackenzie said, "would rather smoke than see," and, we may add, would rather carouse than live. Again, the presence or absence of atrophic signs in the papillæ, or the presence of a marginal scotoma, modifies the future outlook. The prognosis is favorable in first and recent attacks with slight central impairment of vision and when the bad habits are discontinued. When relapses have occurred, there is a possibility of the disease passing into a progressive atrophy with permanent, incomplete, or may be absolute, blindness.

In the early stages of the affection, with simple complaint of a slightly foggy vision, the central scotomata may be overlooked unless great care is exercised in the examination of the visual fields. Even at this period, however, the color-perception is diminished in the area of the scotomata before there is much loss of the acuteness of vision. This is generally the case in all retinal or nerve disease followed by atrophy, and it is an important fact to be remembered in the observation of all such cases, and in doubtful ones the color sense ought to be carefully tested—small color objects being used in preference to large ones. In cases of early simple central scotomata the area of diminished or lost color-perception is sharply defined, whereas in cases of progressive scotomata with atrophy resulting there is a zone of color uncertainty between the lost and normal color fields. Moreover, in the progressive atrophies there is present, sooner or later, marginal and often concentric limitations of the visual fields. Also, in these cases, the temporal halves of the disks are obviously atrophic, as seen by their tendon-like appearance, and their evident depression below the level of the surrounding retina. It must be remembered that the typical central scotoma is always bilateral, and, at the commencement, never an area of lost but only of diminished vision. Paracentral scotomata have also been observed, either together with or independently of the central form.

The etiological indication is our guide to treatment of central amblyopia, and applies to all forms of toxæmic neuritis. To restore the functional integrity of the nerve tissues and to limit further progress of the disease, stop entirely the introduction of both poisons—alcohol and nicotine—into the system, if both are used, or if only one is taken, see that it is interdicted. Restore the normal nervous tone by a carefully regulated life, good hygiene, fresh air, tonics, and a nutritious and easily digestible diet. Iodide of potassium is a useful drug in these cases, especially where active ocular symptoms are present, vision improving, with a reduction of the hyperæmia and irritation. Dry cupping or blistering the temples, together with a guarded general derivation by skin, bowels, and kidneys, is also followed by good results in non-debilitated patients.

For the more chronic cases with apparently permanent blindness, as well as for the general peripheral neuritis, the subcutaneous or internal use of strychnia is advisable. For the spinal neurotic pains the aromatic series of analgesics are to be recommended. Gentle galvanization of the eyes and extremities is followed by good results.

16 Laflin Street.

[1] The uræmic amaurosis, rarely seen, and usually after convulsions in kidney disease, rapidly develops into complete, but usually transient, blindness, has a central origin, and does not require our attention here.

A Matured Infant.—At the session of May 24, 1892, of the Society for Clinical Studies, of Havana, Cuba, Dr. Plá presented a child of three years and ten months of age with an extraordinary abnormal development of the genitalia. When nine months old this child had a continued fever that lasted two months, the temperature oscillating between 39° and 40.5° C. Since then began the abnormal development. To-day his physiognomy is that of an adult, which makes a great contrast with his height, 45 inches; his weight is 60 pounds. The intelligence is below the normal for a child of his age. In regard to the genital organs, the penis, in a flaccid state, measures 4 inches, and when erect, 5 inches; its circumference then is 4¼ inches. He has frequent erections, which are provoked at the least contact, but has no ejaculation. All the pubis is covered with hair. The testicles are unusually large, especially the left one, that measures 3 inches in length by 5 in circumference. The larynx has also an abnormal development, the tone of the voice being *basso profundo* or low base, and the words sometimes do not seem human. Has no hair under the axillæ, but a dark shaded line is shown over the upper lip, formed by very tiny, silky hairs. When one year old he had all his teeth changed, that is, his permanent set of teeth are to day like in a boy fourteen or fifteen years of age.—*Doctors' Weekly.*

A California Quack makes the somewhat rash promise that he will pay half the funeral expenses in cases where he is "not successful."

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NEW CONTRIBUTIONS TO THE PHYSIOLOGY OF THE HEART.

THERE appear to be some practical deductions of high importance which flow from the scientific researches of Dr. C. S. Roy and Mr. J. G. Adami, on the physiology of the mammalian heart. These gentlemen have made a long series of experiments on the organ in question, and have recently presented their results in abstract to the Royal Society. We cannot by any means recapitulate all the facts obtained by them, but will present some of the more important.

The heart usually sends out more blood when it beats slowly, and less when it beats rapidly. This law, if it be one, does not apply however to slowing of the heart from stimulation of the vagus nerve. Slowing from such cause is accompanied by a diminution of the output which may amount to one third. Hence the vagus is a nerve which essentially protects and lightens the work of the heart. It stands in especially close relation with the brain, so that when that organ is flushed and congested the vagus is stimulated and the output of blood lessened. The vagus has a strong inhibitory action on the veins and auricles, but it cannot, however strongly excited, entirely stop the action of the ventricles. In other words, one cannot kill by overstimulating the vagus and stopping the heart. Furthermore, Roy and Adami assert that the action of the vagus on the heart is not a weakening one.

Stimulation of the accelerator or augmenter nerves of the heart increases the output and the rapidity of the beat. In other words, they increase the work of the heart. They do this by increasing the force and frequency of the auricular contractions. It seems, therefore, that both the vagus and the augmenters act upon the heart through modifying the auricular contractions.

There are certain fibres running partly in the vagus which increase, and others which decrease, the activity of the heart when stimulated, acting probably upon the coronary arteries. It is shown that the blood-pressure in these same arteries is an important factor in modifying the activity of the heart, it being increased when they are dilated, and lessened when they are contracted.

It is shown also that the augmenter nerves have no effect on the heart except by inhibiting the vagus; and, conversely, the vagus cannot lessen the strength of the heart's contractions except by acting on the augmenters.

Another very important fact brought out is that a change of the volume of blood in the body affects greatly the contraction volume and output of the heart. Injections into the veins of a volume of defibrinated blood equal to one-tenth of the total blood in the body may double the output. It is important to note, however, that there is no increase in the strength of the ventricular contractions; increase in the work, therefore, of the ventricles due to increase in the output has no tendency to automatically increase the force of the ventricular contractions.

Increase of the watery constituents of the blood increases the contraction volume and output to the same extent (though only temporarily) as does transfusion of blood, but acts more unfavorably on the heart, seeing that the work done by the ventricles is increased, while the nutritive value of the blood supplied to the coronaries is diminished.

It would seem, therefore, that the injection of saline solutions in cases of great cardiac weakness has not a sound physiological basis.

It is shown finally that the change in the heart and circulation which takes place during asphyxia points to the conclusion that, when the total amount of oxygen in the blood is lowered, it is for the benefit of the economy that those organs, such as the central nervous system, whose continuous blood supply is a vital necessity, should be richly furnished with blood by constriction of the vessels of the spleen, kidney, and digestive system, whose blood-supply can be cut off temporarily without danger to life, and also that the heart should carry on the circulation in a manner involving as little waste as possible of its own substance. This it is the function of the vagus nerve to bring about.

HERNIA IN INFANCY.

PREVENTION is better than cure, as all agree, but we fancy that the generality of physicians are not applying this principle to hernia. In an article on "Hernia in Infancy," by Dr. De Garmo, of this city, it is stated that one-half of all abdominal hernias occur during the first five years of life, and we are told later that during this period nearly all hernias could be cured, if properly attended to. The hernias met with in infancy are the inguinal, umbilical, and ventral. Those which are congenital are produced, if inguinal, by the descent of the testicle. Acquired hernias are produced by tight bandaging, constipation with straining, coughing, and in rare cases, from a very tight prepuce. Dr. De Garmo believes that all the hernias of infancy should be promptly and carefully treated. If reducible, as they usually are, they should be replaced and a proper truss with a hard pad worn constantly. All substitutes for trusses such as bandages, elastic bands, hanks of worsted, etc., should be rejected. He says:

"There is no lack of good trusses in this country. The druggists of every town and hamlet in the United States are annually visited by representatives of manufacturers whose products are not equalled in any other part of the world. Furthermore, such patents as were of value have expired, so that competition is in price and quality, resulting to the benefit of the consumer in this instance.

"In selecting a truss for use on an infant the first question is as to the style or pattern which will be best adapted to the purpose. I would condemn all infant trusses which are made to apply from the side of the rupture, all of those where the pad is placed upon a descending arm at a level lower than the pelvic spring, and all trusses cushioned or padded with soft material. The so called French and German styles of truss, which comprise the bulk of stock of many druggists, should have become obsolete half a century ago.

"In making the selection the following points should be borne in mind: First, the spring should be so tempered that it may be readily bent to the exact shape of the child, and its pressure added to or diminished by increasing or removing the amount of curve which it possesses; second, the entire truss should be impervious to moisture, that it may be frequently washed; third, it should be durable.

"The more simple in design the truss is, the better it is, as a rule. Pads with ball-and-socket self-adjusting action, so called, or with complicated set-screws for adjustment, are entirely unnecessary, and soon become useless.

"For the treatment of single inguinal hernia in the infant, the spring which, from the pad, crosses the front of the abdomen, passes around the hip of the opposite side, and across the back, is one of the most valuable appliances that can be used. This truss can be obtained of almost every druggist in the country, the spring covered with either hard rubber or celluloid; it is known in the trade as the "cross-body" truss. A spring of this style will surround about two-thirds of the pelvis, and while it is supplied with a strap to complete the circumference, it readily holds itself in place whether the strap is buttoned or not."

The pressure should be light, and it would be much better if physicians themselves would learn to adjust the trusses and watch them. It is probably in part the patient's fault that this is not done; for he is inclined to save a few dollars by going straight to the instrument-maker.

The truss should be worn for at least a year. In infants under six months of age, the writer seldom uses a truss for the cure of umbilical hernia. The cure is usually accomplished within three or four months, and he employs, as a compress, cork cut so as to press slightly into the navel and support the surrounding parts. Corks used by druggists for wide-mouth bottles answer this purpose exceedingly well. A thin layer of absorbent cotton is placed under this, and the whole is strapped down by one-inch strips of Mead's rubber plaster passing about two-thirds around the body. A dressing of this kind, changed about once a month, we are told, answers every purpose.

However, practically, it is found that the rubber plaster slips or irritates the skin, and if the infant is washed as often as it should be the dressing rarely can be kept on long. In infants Dr. De Garmo finds that an injection of Heaton's fluid helps the cure, though it rarely succeeds with adults.

A Belligerent Parson.—A clergyman in England was recently fined ten dollars for assaulting a physician, one of his parishioners, who had fallen under his displeasure.

GAMBLING FOR THE BENEFIT OF HOSPITALS.

In Paris the authorities have struggled long, and at times earnestly, to suppress gambling, but without success, and they have now learned, what all governments must learn sooner or later, that it is one thing to make laws and another to enforce their observance in the face of public opinion. A nation cannot be made virtuous by enactment, and the conscience of the people must be educated through precept and example, for it can never be quickened through force. So in Paris, having failed to suppress gambling, they have made a virtue of necessity and placed a tax on wagers, turning over the money so obtained to the "Assistance Publique." This body has applied a large portion of the sum thus obtained to the erection of a hospital for consumptives, and smaller amounts have been distributed among other hospitals.

In London there is no such system, we believe, for the Englishman is too virtuous to submit to any tax upon his vices, but many of the hospitals are nevertheless to be benefited this year in a similar way. Baron Hirsch, who is known here chiefly as the rich Englishman who has sent us so many undesirable fellow-citizens, is said to have given the whole of his winnings at the races for the past year to hospitals and other charitable institutions. These winnings amounted to about $35,000, and were distributed to various institutions in sums of from $2,000 to $5,000 each. If all who "play the races" were as liberal as this the hospitals and dispensaries would have few wants unsupplied, and the young practitioner would be in a bad way indeed.

A CONTRIBUTION TO THE CHLOROFORM AND ETHER QUESTION.

An investigation as to the relative danger of ether and chloroform has been conducted by a committee of the German Surgical Congress, and some interesting statistics were given at its recent meeting. Professor Gurlt, the chairman, states that 109,230 narcoses have been observed, of which 39 terminated fatally; of these, 94,123 narcoses were by means of chloroform, the number of deaths being 36—that is, a proportion of 1 to 2,614; ether was employed in 8,431 cases, with 1 death; chloroform and ether, 2,891 times, with 1 death; ether and alcohol, 1,380 times without a fatal termination; bromethyl, 2,179 times, also without deaths; pental, the new remedy, 219 times, with 1 death. Among the chloroform narcoses 836 were by means of Pictet's crystallized chloroform, obtained by the help of intense cold. On the motion of Bruns, the Congress decided to continue the inquiry for another year.

The figures already obtained agree pretty closely with those collected in this country, and abundantly sustain the position long taken by American surgeons as to the relatively greater safety of ether. They also make very incomprehensible the statements of surgeons who, like McGuire, have seen 28,000, or like Nussbaum, 90,000, chloroform narcoses without a death.

Thiophendiodid is the name of a substitute for iodoform brought forward recently by Spiegler of Vienea. It occurs in the form of tubular crystals, soluble in warm alcohol, ether, and chloroform, but insoluble in water.

News of the Week.

A Method of Increasing the Intensity of Heart Sounds.—Azouley (*Gaz. des Hôp.*, May 12, 1892) communicated to the Academy of Medicine of Paris, May 10, 1892, a method of procedure which allows of the more easy detection of cardiac bruits when they are only slightly marked, and which is capable of bringing them into evidence when they are absent during our examination of the patient. It consists in making the patient lie as horizontally as possible, with the arms raised above the head, and the head and legs raised as much as possible on cushions. Cardiac tension is thus increased, and the physical signs accentuated.

Hippocrates on the Mumps.—The genuine works of Hippocrates do not contain a single article devoted especially to diseases in children, and references to children are not numerous. But the paucity in the number of these references is largely compensated for by their interest and the careful description they contain, comparing in some instances closely with the descriptions given in the text-books of to-day. For example, Hippocrates in Book I. of the Epidemics gives the following interesting account of mumps, which shows the wonderful observation of the great master, even in small things: "Swellings appeared about the ears, in many on either side, and in the greatest number on both sides, being unaccompanied by fever, so as not to confine the patient to bed; in all cases they disappeared without giving trouble, neither did any of them come to suppuration, as is common in swellings from other causes. They were of a lax, large, diffused character, without inflammation or pain, and they went away without any critical sign. They seized children, adults, and mostly those who were engaged in the exercise of the palestra and gymnasium, but seldom attacked women. Many had dry coughs without expectoration, and accompanied with hoarseness of voice. In some instances earlier, and in others later, inflammation with pain seized sometimes one of the testicles and sometimes both; some of these cases were attended with fever and some not; the greater part of these were attended with much suffering. In other respects they were free of disease, so as not to require medical assistance." —*Translation of Hippocrates by Francis Adams.*

International Congress of Experimental Psychology.—The second session of the above-named Congress will be held in London, on Monday, August 1, 1892, and the three following days, under the presidency of Professor H. Sidgwick. A Committee of Reception has been formed, which includes among others the following names: Dr. A. Bain, Dr. D. Ferrier, Mr. F. Galton, Dr. Shadworth Hodgson, Professor V. Horsley, Dr. Hughlings Jackson, Dr. Charles Mercier, Professor Croom Robertson, Dr. G. J. Romanes, Mr. Herbert Spencer, Mr. G. F. Stout, Dr. J. Ward, and Dr. De Watteville. Among the papers to be read are the following: Professor Bernheim, on "The Psychical Character of Hysterical Amblyopia;" Dr. Donaldson, on "Laura Bridgman;" Professor Stanley Hall, on "Recent Researches in the Psychology of the Skin;" Professor Horsley, on "The Degree of Localization of Movements and Correlative Sensations;" Professor Lombroso, on "The Sensibility of Women, Normal, Insane, and Criminal;" Professor Richet, on "The Future of Psychology;" Dr. Romanes, on "Facts of Instinct in Relation to Theories of Heredity;" Professor Schäfer, on "The Anatomical and Physiological Relations of the Frontal Lobes;" and Dr. Baron von Schrenk-Notzing, on "A Statistical Study of Susceptibility to Hypnotism."

Hippocrates on the Treatment of Hysteria.—When the uterus fixes itself to the liver. "This happens principally in old maids and widows, or in sterile women, because not giving birth to children they have not the purgation that the lochia would give them. Detach the tumor carefully from the liver with the hand and pull it downward and put a bandage around the hypochondrium. Also use fumigations, purgations, and aromatic fomentations to the uterus. This is only done for widows, but the best cure is pregnancy. For virgins we should recommend marriage; apply nothing to the nostrils; do not even take a purgative; drink, fasting, castoreum and conyza for twenty days in wine which has as much bouquet as possible; avoid anointing the head with any perfume, and do not even smell one." It is evident with Hippocrates it was pregnancy, not sexual intercourse, which was beneficial in the neuroses.

Against Proprietary Medicines.—At the meeting of the Missouri State Medical Association the following resolutions were unanimously adopted:

Whereas, The evil of prescribing and recommending proprietary medicines is constantly increasing, much to the detriment of the profession and the public, especially the latter, many of whom are led into the drug-habit; therefore,

Be it resolved, by the members of the Missouri State Medical Association, That we condemn the practice on the part of some physicians of giving certificates as to the efficacy or special uses and advantages of proprietary medicines, or what is usually understood by this term.

Resolved, That as a body we recommend to the profession the future discontinuance of such medicines, if now used by them.

The Association of Visiting Nurses in Chicago is supported by the society girls of the city, who organize sewing-classes and arrange amateur entertainments, and by professional men and women, who contribute funds for the expenses of the work. Seven trained nurses are employed, and wear a uniform of blue and white, with white collars and cuffs, and a white cross on the left arm. Each nurse has a district in which she goes from house to house among the poor, attending to their sick, and reporting cases of distress to the proper societies for relief. The society has no fund, but is supported by voluntary offerings.

A Biography of Dr. D. Hayes Agnew.—Dr. J. H. Adams, of 252 South Seventeenth Street, Philadelphia, is, at the request of Mrs. D. Hayes Agnew, preparing a biography of her late husband, and is desirous of obtaining from Dr. Agnew's former friends, colleagues, associates, students, and acquaintance all such authentic data as relate in any way to his career or character. Any material, however insignificant, will be welcomed by Dr. Adams, and credit will be given for all facts which are used.

The Summer Corps of Physicians began work on July 5th. There are about fifty of them, and their duty is to visit every tenement-house in the city and to take care of all cases of sickness, especially in children, among the destitute who are unable to pay for a physician's services. They are appointed to serve for two months and are required to devote eight hours each day to the work. The salary is $100 per month.

Dr. Sherman Van Ness, who recently removed to Omaha from this city, has been elected Professor of Gynecology in the Omaha Medical College.

A High Death-rate.—For the twenty-four hours ending at noon on July 12th, there were two hundred and sixty deaths in this city, the largest number of deaths for one day reported in over three years. The large increase was chiefly among children, upon whom the evil effects of hot weather tell with special force.

M. Pasteur is reported to be suffering from "cholerine," a disease which is prevalent now in Paris, and which some believe to be genuine Asiatic cholera.

The Cholera is now declared epidemic in Baku, on the Caspian Sea, and the inhabitants are fleeing from the city, even the government officials and city authorities having deserted their posts. The condition of the sick and of the few who remain to care for them, is said to be deplorable in the extreme. It is rumored that the disease exists in Kertch and other Crimean ports, and Akka, or Acre, on the Mediterranean shore of Asia Minor, is also infected. In Paris, the disease called by the authorities "cholerine," continues to spread, though in a mild form.

Small-pox is prevailing in Victoria, B. C., and all the ports on Puget Sound have established stringent quarantine regulations. Cases of the disease have also been reported in Whatcom and Seattle, in United States territory.

Chicago as a Sanitarium.—A reporter has been interviewing the World's Fair Commissioners as to the probable effect of a cholera epidemic upon the attendance at the great show in 1893. The authorities do not seem to be dismayed at the prospect, and rather affect to believe that Chicago would be a good place to go to to avoid cholera. One of them is reported as saying: "We have one of the healthiest cities in the world. I believe with care we can avoid the cholera." This is cheerful, even if not founded strictly on fact.

Alcoholism.—A Christian Endeavor orator, at the recent meeting in this city, had this to say about alcoholism: "This is, for instance, the golden age of patent medicines; the windows of the apothecary are full of sure cures for drunkenness, and religious and reform newspapers fairly tumble over one another recommending substitutes for regeneration, by hypodermic injections, at a price not one drunkard in three thousand can pay. Drunkenness is sin, not the only one, nor the worst. I would as lief stagger to the gate of heaven drunk and in rags, as a sober, cleanly, dainty, natty hypocrite; I would as willingly roll into judgment limp with alcohol as a calm, clean accomplice of the saloon; I would go as readily maudlin and gibbering to sentence as with the shame-gold of license in my hand, or in my pocket the price of a tenement let to shame. All these are sins, and sinners need at the last diagnosis not salve, but salvation."

New Remedy in Diabetes Mellitus.—Professor Winternitz, of Vienna, recently drew attention to a domestic drug that he thought had been neglected. He related several renal cases that he had successfully treated by an extract made from the wild bilberry. His first experiments with the extract were directed toward the mucous membranes of the mouth, and finding it successful, extended his observations to the bronchi, bladder, and renal organs, where he met with equal success. He admitted having combined with the treatment the hydropathic applications, which were considered to have modified the avowed action and efficacy of the drug. Weil, of Berlin, has now added new testimony to the record of value attributed to this plant, in assuring us that it has acted in a wondrous fashion in apparently curing a young man of diabetes mellitus.

The Library of the American Medical Association is to be moved to Chicago and placed in charge of the Newberry Library.

The Rush Monument Fund amounts now to over $2,000.

A Jenner Centennial will be celebrated in Washington in 1896.

The Annual Receipts of the American Medical Association are $30,468.

Contract Surgeons.—The number of railroad surgeons in this country who practise under contracts is said to be about six thousand. The membership of the Association of Railroad Surgeons has reached about twelve hundred. The objections made to railroad surgeons by their professional brethren are, as stated by a committee of the American Medical Association, first, that under the rules of the railroad companies the railroad surgeon is expected to take charge of all employees and passengers injured in railroad accidents, and this without regard to the ethical rights of any outside physician who may have been called in previous to the arrival of the railroad surgeon. Second, that the railroad surgeon is in the habit of accepting inadequate compensation for his services, which habit is detrimental to the best interests of the profession by lowering the standard of values for surgical services. Practising by contract is being done more every year. Contract practice is not confined to railroad surgeons but includes all the following classes: Medical officers of the Army and Navy and Marine-Hospital Service; medical officers of health, State, county, and municipal; medical officers of public and private hospitals, asylums for the insane, and the deaf, dumb, and blind; physicians to penitentiaries, and jails, and almshouses; physicians to military schools and to schools not military; medical directors to life insurance companies and beneficiary associations; physicians to mines and factories, and furnaces and workshops; and last, the surgeons who practise by contract for the railroads of the country.

The Mississippi Valley Medical Association will hold its eighteenth annual session at Cincinnati, Wednesday, Thursday, and Friday, October 12, 13, and 14, 1892.

Society Reports.

THE CONGRESS OF THE GERMAN SURGICAL SOCIETY.

Twenty first Congress, held in Berlin, June 8, 9, 10, and 11, 1892.

(Special Report to the MEDICAL RECORD.)

In memory of the deceased master of surgery, Bernhard von Langenbeck, the Association of German Surgeons have at last erected a monument, one that could not have been more worthily or imposingly designed; a home for the Surgical Congress, of which the deceased had been President for many years, and finally Honorary President. It was his earnest desire, during his lifetime, to establish an abode, not dependent on time or circumstances, for the Association's work. His wish remained unfulfilled. Now, at last, the name "Langenbeck-haus" will keep alive in the memory of coming generations the name of the noblest and most humanitarian man of our times.

The memorial oration was delivered by the President of the Association, PROFESSOR V. BARDELEBEN; the opening address by PROFESSOR V. BERGMANN. Here were assembled from far and near the friends and pupils of the world renowned master of surgery, to witness this grand celebration. After the dedication of the building, the proceedings for the day were at once taken up.

The Surgical Meaning of New Fire-arms was the title of the first paper, by PROFESSOR BRUNS, of Tübingen. The most important change in the new arms consists in the small calibre of the bullet, by means of which a greater velocity is attained. The velocity is further increased by the new powder. The rotatory movement is also increased. In order to study the effect of the new form of bullets, the speaker had undertaken numerous experiments on living or recently slaughtered animals. From these observations he has arrived at the following conclusions: These gunshot wounds have a different appearance according to whether the bullet comes from a longer or shorter distance. The result is relatively the best at a distance of from 800 to 1,200 metres. At such distances explosions only take place when the cranium is struck. Bones that are struck seldom splinter, but show bullet-openings much more frequently; these even appear on the cranium. The soft parts show at the point of entrance of the bullet a circular opening of 5 millimetres in diameter; at the exit a slit 6 to 7 millimetres in length. Especially at short or very short distances is an explosive action effected, which, although not so considerable as was caused by former arms, is yet sufficiently disagreeable. A shot within close proximity occasions considerable destruction of soft parts and great shattering of bone. On the other hand, there is scarcely anything to be noticed exteriorly. One can hardly imagine what intense shattering has taken place from within from the insignificant point of entrance; this becomes more apparent from the length of the slit at the point of exit. The speaker did not observe bullets remain in a part when shot at a distance of 1,200 metres; on the other hand, shreds and pieces of clothing were not seldom found in the bullet-canal, and in case of bone destruction at the point of bone injury. An important difference between the former lead bullets and the modern Nautel bullet is that the latter does not change its form in entering a part as the former does. Only when it has penetrated a wall or has rebounded against some hard substance is it possible for its shape to be changed, and wounds then become accordingly more dangerous. In consequence of the greater force of percussion, it can be said at present that the degree of mortal injury is proportional to the range of the projectile. Whether, on this account, the number of mortal wounds will be proportionally increased in future wars is questionable. The arms will be held at much greater distances in case of greater danger. At a distance of 100 metres, 4 to 5 ranks of a closed regiment are overcome by the present form of bullet; at 400 metres, 3 to 4 ranks; at 800 metres, 2 to 3 ranks. A change must therefore be made in army tactics, the number of deaths will not then be any larger than in former wars. The new form of arm has, notwithstanding certain disadvantages, special advantages, in that bullet probings and extractions are much less often necessary, and wounds will appear aseptic much more frequently than in former wars. The experience of American physicians during the late Chilian civil war proves this, and shows that the discovery of the new fire-arms is an advance in humanitarian methods. No doubt many complicated questions as to the new form of arm remain still to be solved, as removal of the wounded as quickly as possible from the line to the hospital

The great distances which these arms bring with them add many difficulties; on the other hand, asepsis being possible, and there being a decrease in the danger from hemorrhage, are exceedingly important advantages. In determining the amount of destruction, it is important to remember that this bullet travels in a perfectly straight line from entrance to exit, so that the degree of injury can be calculated from the topography with great accuracy. The speaker recommended the use of a perfectly antiseptic dressing as the first indication in the treatment of such wounds.

In the discussion of this subject DR. REYN, of Hanover, spoke regarding the hydraulic pressure upon organs previously filled with fluid and then shot at. After having performed difficult experiments and calculations, the speaker came to the conclusion that the percentage of mortal wounds is so much less the smaller the calibre of the bullet. He did not agree with the previous speaker regarding the demolishing effect of bullets fired from short distances.

DR. MESSNER, of Munich, had experimented on the question whether the heat developed by such bullets was sufficient to destroy germs placed in their way. For this purpose the speaker shot through boxes containing gelatine cultures, and found that if the bullet passed through cultures consisting of staphylococcus pyogenes or the bacterium of germ pus, such germs developed regularly in the bullet canal.

PROFESSOR HELFERICH, of Greifswald, presented specimens showing extraordinary bone destruction, resulting from firing of bullets of small calibre at shorter distances (about 400 metres).

PROFESSOR KÖNIG, of Göttingen, had observed similar results at greater distances (800 metres).

Location of Field Hospitals.—DR. HAASE, of Berlin, spoke of the position to be taken by hospital-carriers in future wars. Inasmuch as the new form of bullet has a range of four kilometres. it has become necessary to locate the surgical wound-dressing department four kilometres distant from the line of engagement. The speaker pointed out the fact that, while in the late war the dressing department was 1,700 to 1,800 metres behind the line of engagement, in the future only a distance of about 2,400 to 2,500 would be necessary. The position at which ambulances should halt to remove the wounded from the field should be chosen at about 700 to 1,100 metres distant from one's own, 1,500 to 1,600 metres from the enemy's line. Here, at least, the danger begins to be lessened. The attendants work naturally unprotected under greater risks, this was also the case in the war of 1870. At that time the percentage of loss of field attendants was 6.6 per thousand.

At present the fact must be added, that the guards lie most frequently, in their new gray cloaks, flat on the ground, and this accomplish better results. The ambulances are arranged in four, instead of two divisions as formerly, and thus double their results. There is no reason to fear that the wounded will not be sufficiently cared for in the future. It might be desirable, perhaps, to have electric lights to search the battle-field at night.

Hunting-dogs could also be utilized with benefit during the daytime. The whole *personnel* of the lower sanitary staff of officers of the German army comprises over forty-five thousand men.

The Immediate Treatment of Bullet Wounds.—Dr. Langenbuch, of Berlin, recommended the immediate closing of the wound with sticking-plaster or sewing it up. Other prominent surgeons spoke against this method, among whom were von Esmarch, König, and Trendelenburg. It appeared as if the discussion would become endless, when the senior surgeon, Professor Thiersch, of Leipsic, arose and said "We should leave such wounds *open*, but should *close* the discussion;" which was immediately agreed to.

Presentation of Patients.—The second session was in great measure filled up with demonstrations Dr. Guterbock, of Berlin, showed a case of recovery from empyema after resection of several ribs, and Professor Bramann, of Halle, presented several patients from whom brain tumors had been removed. Some of these had already entirely recovered, others were on the way to recovery.

Professor Czerny, of Heidelberg, remarked that trephining was now practised in the treatment of insane. Of course, recovery could not be anticipated at once; on the other hand, trephining had a great future in these cases, in regulating intracranial blood-pressure.

Professor Knöte, of Marburg, showed a patient in whom resection of the ureter for stenosis had been undertaken. The healthy part of the ureter was sewed into the sinus of the kidney.

After this Dr. Reichel, of Wurzburg, spoke of herniæ of the ureter through the inguinal canal, and Dr. Barth, of Marburg, on the histological changes taking place in the repair of kidney wounds, and the regenerative changes of kidney tissue.

Dr. Olsberg, of Hamburg, then read a paper on "Glicoma of the Kidney."

Actinomycosis.—Dr. Schlange, of Berlin, presented several patients who had recovered from the disease. The prognosis of this disease is, on the whole, good. When the head and neck are affected with it, recovery results usually within several months, being seldom delayed more than a year. In case of lung actinomycosis, recovery is only questionable when the pleura is attacked at several distinct points, and perforation takes place. The prognosis of peritoneal actinomycosis is unfavorable if the retro-peritoneal tissue is infiltrated or pyæmia sets in.

In the discussion, Dr. v. Eirelsberg, of Vienna, spoke of a case of actinomycosis in which recovery took place after the injection of tuberculin.

Tubercular Bone and Joint Disease.—Professor König then spoke on the treatment of bone and joint tuberculosis on the basis of modern investigation. From his experience the speaker came to the conclusion that the first indication in treatment is mechanical (rest, extension, pressure, etc.). As an adjuvant to this method, the injection of iodoform serves a good purpose in many cases. Early resections are to be avoided. When sinuses have formed, or caseation or bony necrosis has taken place, the part must be treated more radically; in severe cases by amputation, in milder forms by resection. The action of iodoform, in the treatment of bone tuberculosis, is only local, and it is therefore necessary to determine and treat every tubercular focus.

The third session was opened by a demonstration by Dr. Thiers, of Colberg, who presented a female patient on whom he had closed a provisional anus after the healing of a syphilitic rectal structure.

Flat-foot.—Professor Trendelenburg, of Bonn, followed with the demonstration of a case of recovered flat-foot. After chiselling through the bones of the leg immediately above the malleoli, the foot was straightened. In this way the arches of the foot are brought into such a position as to be able to bear the weight of the body without deformity. Of importance is the observation of the speaker that patients suffering from flat foot suffer also with profuse perspiration of the feet. The speaker believes there is some connection between these two conditions, and is of the opinion that by pressure on the nervus plantaris reflexly a pathological increase in the perspiration is produced.

Pyloric Stenosis.—Professor A. Köhler, of Berlin, showed a patient on whom he had performed with great success a pyloro-plastic operation, according to the method of Heineke-Mikulicz, for pyloric stenosis. The patient, who came to the Charité weighing forty-eight pounds, now weighs one hundred and thirteen pounds. Digestion is again perfectly normal.

Resection of the Trigeminus.—Dr. Krause, of Altona, related a case on whom a successful resection of the second branch of the trigeminus had been performed. A large part of the skull of the one side was chiselled out and turned down, and the wound was tamponed for five days. The second branch of the trigeminus was then sought for, as it passes out of the foramen rotundum, care being taken not to injure other parts. The nerve appeared thickened and reddened. The patient was relieved of her pain immediately, but whether the cure would be permanent time alone would tell.

Professor Madelung, of Rostock, then reported a case of resection of the third branch of the trigeminus.

Operation for Leprosy.—After Professor Bardenhauer, of Cologne, had presented several cases of resection of the upper and lower jaw, Dr. Cramer, of Wiesbaden, showed a case of leprosy. By incision the nerve plexus of the upper arm was laid bare and the nerve structure appeared to have been softened. In the softened places the lepra bacilli were found in small numbers. The smallest of these nerves was laid aside, and two others split longitudinally and scraped until the softened parts were thoroughly removed. The wound was then closed and healed at once. The arm, which until then had been useless, now recovered its normal functions. Relapse had not occurred.

Aseptic Wound Treatment.—Dr. Neuber, of Kiel, then read a paper on this subject. He pointed to the beneficial influence of moisture on the walls of the operating-room. He thought that the first wound infection was frequently brought about through dust from the walls of the operating-room, and he obviates this by keeping the walls moist. If one proceeds in this way, sterilization of instruments and dressings is not always necessary.

Dr. Schimmelbusch believed in the perfect antiseptic treatment of wounds. The infection through germs floating in the air, he did not think half as dangerous as was usually supposed. Infection is greatest by contact with parts; and an energetic sterilization of instruments, dressings, etc., is always necessary.

Professor Bardeleben agreed, on the whole, with the last speaker, yet he believed that in regard to the degree of antisepsis to be practised, every wound must be considered individually.

Abscess of the Brain.—Dr. Arthur Hartmann, of Berlin, demonstrated an interesting case of brain abscess. A dragoon had fallen from his horse in the last French war; after several years he began to suffer from headache, which gradually became serious. He was sent from one physician to another without relief. After opening and cleaning out of the abscess, he was permanently cured.

Discussion was now opened on Professor König's paper on "Bone and Joint Tuberculosis." In general, the other surgeons agreed with König, but in regard to details there were many differences

Dr. Schleich, of Berlin, pointed out the advantageous influence of fat on tubercular foci. He was forced to this conclusion by the fact that tuberculosis occurs exceptionally in fatty organs.

Dr. Schuchart, of Stettin, then spoke of the transmission of tuberculosis through the sexual organs.

Collective Investigation on Anæsthetics. — Dr. Gurltz, of Berlin, gave his report, collected for the Association, concerning narcotization statistics. During the first year of inquiry but 24,625 reports were sent back; the last year 84,605 were sent, from 62 observers. In the first report there were 6 deaths; in the last, 33. A large number of these deaths are certainly to be counted against other concomitant circumstances. These statistics then show 109,230 narcotizations and 39 deaths. Chloroform has caused by far the most deaths, namely, out of 94,123 narcotizations 36 deaths, that is, 1 to 2,614. There were 8,431 cases of ether narcotization, and 1 death; of narcotization from a mixture of chloroform and ether there were 2,891, with 1 death; from mixture of ether and alcohol, 1 380, without any; and from bromide of ethyl, 2,179, without a single death; 219 pental narcotizations, with 1 death. Out of the chloroform narcotizations, 836 were given with crystallized chloroform prepared by Pictet. This preparation is easily kept, and like pental causes narcosis quickly, and does not cause some of the unpleasant results of chloroform. From the very excellent effects of ether, it is to be highly recommended for general use; it has already gained an excellent reputation in this respect in America and England. Bromide of ethyl can only be used for short narcotizations, about three minutes, and can therefore only be used in dentistry. It has also the disadvantage that it does not cause relaxation of muscles.

Professor Bruns, of Tübingen, moved that the collection of statistics be carried on for another year.

Extirpation of the Larynx.—Professor Julius Wolff, of Berlin, opened the fourth session with demonstration of a patient on whom a cancerous larynx had been entirely extirpated. This case is remarkable in that the patient, by the aid of an artificially prepared larynx constructed, according to the ideas of Professor Du Bois-Reymond, by the mechanic of the Physiological Institute, was able not only to speak plainly, but even to sing a song, to the great amusement of the assembly.

Extirpation of the Uterus.—Professor Olshausen, of Berlin, demonstrated some cases of total extirpation of the uterus. According to the experience of the speaker this operation deserves to be more frequently practised. Then followed a communication by Dr. Toronk, of Vienna, on "Primary Sarcoma of the Small Intestine," and one by Professor Schieller of Berlin, on "The Use of the Sculptor's Chisel in Bone joint Operations, especially in Tubercular Cases."

The Mannesmann Hammer and Chisel.—Professor Riedel, of Jena, advocated the employment of these instruments. The homely wooden hammer suffers during sterilization, but its light weight, is on the other hand, a great advantage over the metal hammer. The speaker had a hollow metallic hammer constructed of Mannesmann tubes of suitable diameter and proper strength. The open ends were soldered with steel plates, and the rod of the head of the hammer so widened out that the end plates could not be driven into the rod, which was narrowed toward its centre. The whole hammer was nickel plated.

Operation for Pressure Paralysis.—Dr. Urban, of Leipsic, spoke concerning operative procedures necessitated on account of the pressure of the spinal column against the cord. At the injured point a horizontal incision is made through the skin and soft parts until the column is reached; another incision is also made on the other side and parallel with the latter, some distance beyond the injured part; the spinal column is then chiselled out until the upper half, with the skin and muscles lying above it, can be raised upward and the spinal cord can be laid bare. The part which has compressed the cord is now raised with a chisel or some similar instrument, and the parts are again turned back and allowed to heal. In one of Professor Thiersch's cases the operation was followed with success.

Professor Gluck, of Berlin, presented a case of recovered brain abscess, also several cases of muscle, tendon, and nerve plastic.

Pental Narcosis.—Dr. Philipp followed with an address on pental narcosis used in the practice on children. According to the experience of the speaker, the results are excellent, the evil after-effects of chloroform are entirely absent. Children are very bright immediately after the narcosis, begin to play, and only here and there are cases of slight intoxication noticed. The speaker has never noticed unpleasant results.

On the other hand, Dr. Schede, of Hamburg, reported that in a dozen pental narcoses, only in adults, he had noticed asphyxia in one case and syncope in another.

Hypodermic Anæsthesia.—Dr. Schleich, of Berlin, spoke next on hypodermatic anæsthesia and its relation to general narcosis. The speaker brought about local anæsthesia not only by means of cocaine, but also of other solutions (salt solution, sugar solution, and even sterilized water). He recommended that narcotics should be used only when it was impossible to employ local anæsthetics. Notwithstanding the wishes of the President for some one to express himself concerning the statements of the last speaker, none of the members responded.

In conclusion, Dr. Korte, of Berlin, spoke on the surgical treatment of purulent peritonitis, and Dr. Lauenstein, of Hamburg, on the growth of adhesions in the abdomen as cause of severe colic.

Professor König, of Göttingen, was elected President of the next congress. During this congress numerous electrical, surgical, and bacteriological instruments were exhibited in rooms adjoining the main hall.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, April 11, 1892.

Joseph D. Bryant, M.D., Chairman.

Case of Hip joint Disease Cured.—Dr. A. M. Phelps presented several cases, the first being that of a young man who had been cured of hip-joint disease. When he had come to his office, twenty-two months ago, the femur was fixed at an angle of 30°, was also adducted, the limb shortened three-quarters of an inch. A lateral splint was applied, by which the angle of deformity was overcome and the patient was allowed to walk about. At present the limb permitted of motion from a straight line to an angle of flexion at the hip of 50°, and there was limited abduction and adduction. The fixation-splint had been worn nearly twenty two months, which showed that prolonged fixation of a joint would not of itself cause anchylosis. Anchylosis was determined rather by the severity and character of the inflammation within the joint.

In this case there was also some stiffness in the knee but the motion here would also go on increasing.

Total Extirpation of the Scapula for Tumor, the Arm being Retained.—Dr. Phelps presented the patient and the specimen. The tumor, which was nodular and as large as a child's head, had involved the whole of the outer surface of the scapula, was attached to the second rib, filled the axilla, and pressed upon the brachial plexus. The glands were involved. It had first been noticed about three years ago, but had grown rapidly of late. A diagnosis of malignant disease was made by himself, Dr. Bull, and Dr Morris. Dr. Phelps operated in November, 1891, making Langenbeck's incision, taking away the entire scapula with the tumor. There was some sloughing afterward, due to the fact that by the Langenbeck incision the chief sources of blood supply—the posterior and supra-scapular arteries—were divided. This incision was somewhat T-shaped, the cross being above. Dr. Phelps said that if he were to operate again, he would make an U-shaped incision and turn the skin flap upward, thus avoiding interference with the blood-supply

Had he attacked the second rib to which the tumor was attached, and exposed the pleura, doubtless the patient would have collapsed. Fortunately the tumor had proved to be a simple fibroid instead of malignant, which would account for non-recurrence. The man had limited use of the arm.

Statistics showed total extirpation of the scapula in 118 cases; 58 for tumor, 9 for injury and other diseases; in 51 the reasons for operating not being given. Known deaths, 25; age, from eight to seventy years. Langenbeck first performed the operation in 1855. Two cases were recorded in New York, and he understood that Dr. Weir and Dr. Bull had operated, but the cases had not been reported.

In connection with this case Dr. Phelps again called attention to the value of a serrated artery-forceps, which so bruised the bleeding vessel as to save the necessity for immediate application of ligature. This was important where in a bloody operation it should be completed as soon as possible.

Talipes Varo-equinus; Result of Open Incision in a Man Aged Forty one.—The third patient presented by Dr. Phelps was Dr. Hunt, of Ohio, who had at different periods of his life undergone a number of operations for talipes varo-equinus, but with little benefit, until Dr. Phelps made open incision of the soft parts and overcame further resistance to replacement by using a powerful lever. This instrument had often spared him the necessity for resorting to osteotomy.

Dr. R. F. Weir said he had extirpated the scapula in two (three?) cases. As Dr. Phelps had stated, there was danger of suppuration following the Langenbeck incision.

The Chairman said that about five years ago he extirpated in one case all of the scapula except just sufficient to articulate properly with the humerus. Hemorrhage was controlled by pressure on the subclavian by means of a sort of crutch covered with soft material. A vertical incision in the long axis of the scapula met another in the line of the spine, the lower angle of the bone was lifted, the muscles were divided, and the neck of the bone was cut through by means of bone forceps. Vessels were tied. The loss of blood was insignificant The wound healed by first intention, and the man had good use of the arm. The disease was malignant, recurred in the lung on the same side after six or eight months, and the patient died.

Case of Sciatic Neuralgia Due to an Osteo-sarcoma of the Ilium.—Dr. J. P. Tuttle read the history of the case with the object, he said, of eliciting a discussion on the differential diagnosis of myalgia or sciatica, due to intra-pelvic growths. The patient was fifty-four years of age, began to suffer from pain in the region of the sciatic nerve in the fall of 1891. Two years before he had been treated for muscular rheumatism, from which he made a good recovery. When Dr. Tuttle saw him in December, the sciatic pain was so severe that he could not go up and down stairs. He was pale, but otherwise appeared well. No evidence of an organic lesion could be discovered. No thickening could be felt in the pelvis. There was slight elevation of the temperature. It was supposed there was a slight malarial element in connection with rheumatism. Later Dr. Janeway saw the patient, they examined for neoplasm, etc., but nothing new was discovered. Large doses of morphine were required to control the severe pain. Dr. Sachs saw the patient, and the diagnosis remained unchanged The pain extended, the man became weaker, atrophy began to appear in the muscles of the affected parts. In January the man became heavy, sleepy, presented the aspect of typhoid fever, had temperature elevation. In February, the left leg rapidly became paralyzed. About this time Dr. Janeway felt a thickening in the left iliac fossa. Somewhat later, fluctuating swellings appeared about the hip-joint, but aspiration withdrew only blood. The pulse became peculiar, jumping suddenly back and forth between about 72 and 120. At autopsy the crest of the ilium on the left side readily broke off into his hand, the swellings were hæmatomous, the hip-joint was disorganized, although there had during life been no evidence of joint disease. Dr. Heitzman had pronounced the specimen a sarcoma of the ilium.

Dr. Tuttle thought that obscure sciatic neuralgias were due oftener to intra-pelvic growths than was commonly supposed. A peculiarity in this case was the fact that competent diagnosticians had been unable to feel any structural change in the pelvis about a week before the patient's death, although a careful examination had been made. Referring to the muscular atrophy, it was not noticed until two weeks before death, at which time the reaction to the electrical current was normal.

The Chairman referred to two cases of sarcoma of the pelvis, the first of which was characterized by very severe and persistent neuralgia without marked degree of atrophy; the second by persistent severe neuralgia and rapid atrophy in the limb. A tumor was felt.

A Case of Spina Bifida in an Adult; Removal of Tumor; Relief.—Dr. C. A. Powers read the history of the case (see p. 64).

Dr. Weir had treated three cases of spina bifida, all in children. If a person had carried a spina bifida to adult life, most surgeons would, he thought, be inclined to let it alone unless special symptoms arose. In one of the three children he made iodine-glycerine injections with a happy result. The second patient succumbed after a third injection. In one he operated, but leakage took place, with death. To obviate this, he would in another case elevate the pelvis and place the patient on his side or face. He thought operative treatment would grow more favorable. His experience with meningocele had been limited to one case.

Dr. R. W. Amidon said, with regard to the case reported by Dr. Powers, to whom he had sent the patient for operation, that he thought the spina bifida was the sole cause of the nervous condition, which was one of spastic ataxia.

Dr. Kammerer had seen two cases of meningocele operated upon, one of which did well, the other died from leakage of the cerebro-spinal fluid. It seemed to him the wound could be so sutured as to prevent leakage.

A Unique Derangement of the Knee-joint Demanding Surgical Interference.—Dr. R. F. Weir read the paper (see p. 57).

Drs. Gibney, Phelps, The Chairman, Sayre, and others expressed their interest in the paper, which described what to them was a unique condition. Dr. Sayre was glad to have this evidence that not all troubles of the knee were due to tuberculosis.

The Secret of Father Mollinger's Cures.—Father Mollinger, whose supposed miraculous cures created great excitement in Troy Hill, near Pittsburg, a year ago, died in the early part of June. He did not rely upon faith alone, but prescribed drugs and accompanied the prescription with most explicit directions. The druggist who filled most of these prescriptions, in an interview with a reporter, said that "the secret of the Father's success lay in the fact that his patients always followed his instructions to the letter. They had faith in him, and no matter what he told them they did it." There is more in this than the believers in the dead priest's thaumaturgical gifts would perhaps be willing to concede.

The Cow and the Countess.—The late Sir James Simpson, when giving evidence in a celebrated case in which the possible duration of utero-gestation was in question, quoted an authentic instance of its unusual prolongation in a cow, and was at once caught up by the cross examining counsel with a "Tut! tut! Professor Simpson, what has a cow got to do with this case?" To which Professor Simpson replied, with one of his blandest smiles, "A cow, sir, is just as good as a countess for my present purpose."

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE CHEMISTRY OF URIC ACID AND GRAVEL—THE LORDS' COMMITTEE ON THE METROPOLITAN HOSPITALS—THE FORTHCOMING ELECTION TO THE COUNCIL OF THE COLLEGE OF SURGEONS.

LONDON, June 25, 1892.

SIR WILLIAM ROBERTS has already achieved distinction for his researches in urinary chemistry. It is therefore not surprising that, on being appointed Croonian Lecturer at the College of Physicians, he should have decided to devote his lectures to giving an account of some further original researches made by him in the same fertile field. In commencing his first lecture, he remarked that the morbid phenomena associated with uric acid divided themselves naturally into those which had reference to gravel and calculus, and those which had reference to gout. In the former, uric acid was thrown down in the free state from the urine as concretions in the urinary channels; in the latter it was thrown down (as sodium bi urate) in the interior tissues of the body. In both conditions the precipitated substance acted as a foreign body and caused mechanical injury, and, in regard to gravel and calculus, the whole of the morbid sequences were thus accounted for. In regard to gout, however, uric acid was supposed to play a double part, and it was commonly believed that, besides the local irritation consequent on the precipitation of crystals of sodium bi-urate in the joints and elsewhere, uric acid in solution in the bodily fluids acted as a true poison. The lecturer intimated that he intended to call in view the soundness of this assumption. He believed it to be more probable that uric acid did not possess any inherent poisonous quality, and that, when mischief did arise from it, that mischief was consequent on the acid being precipitated in the solid form, as sodium bi urate, in the fluids or tissues of the body. That view, if substantiated, would bring gout and uric-acid gravel into closer parallelism. Gout would then become like gravel, in so far as its phenomena depended on uric acid, but of course no further, a disease of which the manifestations were proximately due to mechanical injury.

Sir William Roberts observed that the amorphous urate deposit of human urine formed a convenient starting-point for the study of the pathological chemistry of uric acid. This was the most familiarly known, and perhaps the least understood, of all the urinary deposits. No clear answers were forthcoming as to what was the chemical nature of this substance, and as to what its physiological analogies and pathological relations were. Uric acid was regarded by chemists as a bi basic acid, and, like other bi-basic acids, it formed two regular orders of salts, viz., neutral urates and acid urates, or bi urates. Of late years neutral urates had figured prominently in certain theories of gout, but such theories were untenable on chemical grounds. These urates could only be produced in the presence of caustic alkalies, and in the absence of carbonic acid and the carbonates; but caustic alkalies could not exist in the living organism, and carbonic acid and carbonates were everywhere present, so it seemed impossible that these urates could arise or subsist in the living organism. The acid urates were the most stable salts of uric acid, and tended strongly to assume the crystalline form; they were encountered, pathologically, in gouty concretions, of which sodium bi urate formed the distinctive constituent. The bi-urates did not occur in the unchanged urine, either in health or in disease, and when bi urates were artificially introduced into normal urine they failed to maintain their integrity, and at once underwent a change of composition. Nor was there any actual proof that uric acid ever existed as a true bi-urate in the healthy blood and interstitial juices; there was also evidence that when uric acid was brought into contact with these fluids it was not taken up as a bi-urate. The bi-urates, therefore, though known to us as pathological products in gouty deposits, were not, strictly speaking, known to us as physiological constituents, either in the blood or the urine. Uric acid, however, in some combination or other, did exist normally in minute quantities in healthy blood, and existed in much larger quantities in healthy urine; so the question arose, what was this other form of combination, this normal and physiological combination, which was neither neutral urate nor bi urate, in which uric acid existed in the healthy body? The lecturer proceeded to show that the physiological salts of uric acid were quadri-urates—salts in which the amount of uric acid was double that required to form bi-urates—and described at some length the researches which had led him to this conclusion. His investigations commenced with a chemical examination of the amorphous urate deposit. When mixed with a considerable volume of distilled water this was speedily disintegrated; a portion was precipitated as uric acid, and the remainder passed into solution in combination with the bases as bi-urates. This had been shown by a former Croonian lecturer, Dr. Bence Jones, and he had suggested that a third order of uric-acid salts (quadri-urates) existed. Dr. Bence Jones's research, however, was incomplete, and there were discrepancies in his analyses, probably due to the small amount of material he was able to obtain at once, and to the changes undergone by it on being kept for a short time. On undertaking to reinvestigate this subject, Sir William Roberts said he found that the urinary excretion of birds and serpents, though usually described as consisting of bi urate of ammonia, was really identical with the amorphous urate deposit of human urine. The larger supply of material thus obtainable facilitated analysis, which showed the composition of birds' and serpents' urine to correspond closely with that required with the "quadri-urate" theory. There were differences in the amount of uric acid precipitated by water from the urine of fowls and serpents, respectively, but this was due to the fact that serpents retained their urine for weeks, under which circumstances a certain amount of uric acid was set free.

The lecturer said the study of the amorphous urate, and of the urinary excretion of birds and reptiles, suggested some interesting reflections. These products were substantially identical, and consisted of the quadri-urates of potassium, sodium, and ammonium. In the urine of man and mammals, however, the quadri-urates were only an insignificant item amid a host of other ingredients, while they constituted practically the whole of the urinary excretion of birds and serpents. The kidneys of birds and serpents were anatomically composed of the same structures as the mammalian kidneys, but how widely different was the product of their functional activity! Not merely was there a substitution of uric acid for urea as the final product of nitrogenous metabolism, but there was the strongly contrasted simplicity of the urine of birds and serpents with the complexity of mammalian urine. There was assuredly such a thing as a functional evolution. The anatomical evolution of the kidneys seemed to have reached its term in the lowest vertebrate form; the mammalian kidney presented no essential structural advance, but an immense functional advance had taken place. The results of studying this functional evolution would probably be to show that the evolution of mammalian urine turned mainly on the point that the mammalian plan required that the renal excretion should be voided, not in the solid or semi-solid form, but as a liquid. But why was the problem not solved completely? Why was this small residuum of uric acid left? It might be that the mammalian type had not yet reached its ideal perfection. The residuum of uric acid in mammalian urine might also be regarded as a vestigial feature—as a "memory" of some ancestral form which eliminated its nitrogen as uric acid. The extreme inconstancy of uric acid, both in regard to its presence and its proportion, in

the urine of different species and of different individuals of the same species, agreed perfectly with this theory, for all vestigial structures were conspicuous for their inconstancy, and, like uric acid, though impotent for good, they were sometimes powerful for evil.

Sir William Roberts passed on to the consideration of the state of uric acid in human urine. There was, he said, an inherent tendency in urine to the spontaneous liberation and precipitation of its uric acid. The chemical reactions were interesting to trace out. It was certain that uric acid always subsisted in the unchanged urine as a quadri-urate. The urine in which this substance was dissolved was a watery solution which contained a number of salts. The phosphates were the most important in regard to uric acid, and they easily oscillated between the monometallic forms, or superphosphates, and the dimetallic forms. When, as usually, the former preponderated, the urine was acid; when the latter preponderated, the urine was alkaline. In an acid urine we had the quadri-urate existing in the presence of water and of superphosphates, and these conditions insured the ultimate complete liberation of the uric acid. The first step was the splitting up of the quadri-urate by the action of the water of the urine into uric acid and bi-urate. The resulting bi-urate was immediately retransformed in the presence of superphosphate, by a double decomposition, into quadri urate. These alternating reactions went on until all the uric acid was set free. What were the inhibitory ingredients which prevented uric acid from being thrown out daily and elsewhere in the form of gravel? The lecturer believed that the saline constituents and the pigments had such an inhibitory action. When urine was dialyzed, whereby its crystalline ingredients were for the most part removed, it lost to a considerable extent its power of retarding the decomposition of the quadri-urates. As to the coloring matters, the lecturer said he had noted that deeply tinted urates were more slowly decomposed by water than pale-colored urates, and urine which had been deprived of its pigment by filtration through charcoal acted much more rapidly on amorphous urate. He suggested that a deficiency of saline matters in the urine and a scanty amount of pigment were factors in the causation of uric-acid gravel.

The Select Committee of the House of Lords on Metropolitan Hospitals have just issued a further report. They express an unfavorable opinion as to the method of administration adopted in the three endowed hospitals (Guy's, St. Bartholomew's, and St. Thomas's). They think there is a paucity of convalescent homes generally, and of hospital accommodation on the south of the Thames. On the question of special hospitals their opinion seems somewhat uncertain, but is unfavorable to the smaller ones. They speak with regret of the want of co-operation between the various hospitals, but discourage the interference of a government officer through the proposed Central Board, and think such board should not be given any statutory powers to license hospitals. Nurses' overwork receives some attention, and pensions for nurses are spoken of with approval.

There are no fewer than ten candidates for the four seats on the Council of the College of Surgeons.

A Prolific Negress.—A negro woman now living in New York recently gave birth to her twenty-fifth living child. She is about forty-two years of age, and when sixteen was married to the husband with whom she is still living. She was born in Richmond, and resided in Virginia until seven years ago. Among the twenty five children there have been no twins or triplets.

Druggists' Insurance.—An Accident Insurance Company announces that it is prepared to insure druggists against claims for damages on account of mistakes in dispensing medicines. "Why," asks the *American Lancet*, "should not medical men be insured against similar misadventures?"

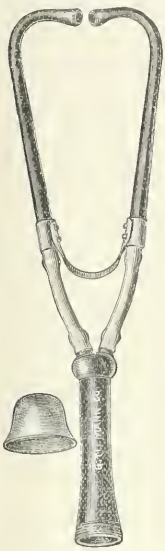
New Instruments.

AN IMPROVED STETHOSCOPE.

By R. K. VALENTINE, M.D.,

BROOKLYN HOME FOR CONSUMPTIVES, BROOKLYN, N. Y.

In presenting this instrument to the profession we claim for it the three cardinal virtues of a stethoscope, namely, excellence as a transmitter of sound; convenience for applying to the chest-wall, and for carrying in the pocket (not an unimportant factor); and thirdly, comparative cheapness. The instrument is composed of hard rubber, the bell and ear-pieces being united by two pieces of ordinary soft-rubber tubing, each about three and a half inches in length.



The bell is a cylinder five inches long, having an internal diameter at the mouth of seven eighths of an inch.

At the top of the cylinder there are two openings, one-quarter of an inch in diameter each, separated by a sharp septum of hard rubber, and the same diameter is continued the full length of the ear-pieces.

When the instrument is in use, the divided waves of sound are carried from the cylinder in two straight lines along the ear-pieces to the curves, which lead them directly into the ears of the operator. The expense of making the stethoscope is largely due to the perfectly smooth finish of the interior of the hard-rubber tubing, throughout its entire length, by which means only are such good results obtained.

A simple method of testing stethoscopes, as to their power of transmitting sound, is by applying their bells to the face of a clock or a watch. By this method the famous instrument of Dr. Dennison, of Colorado—having a diameter of a quarter of an inch more at the mouth of the bell than the one under consideration—is the only stethoscope we have been able to find which transmits a louder sound, and that but slightly, when the accessory bells are not in use; but when this stethoscope is armed with its ordinary soft rubber cone, having a diameter of one and three-quarters inches at the mouth, it transmits a louder sound than does the Dennison instrument even with its largest hard-rubber bell adjusted, and having a diameter of two and three quarters inches. The cause of this is, doubtless, due to the Dennison accessory bell being attached to the permanent bell by passing it within the latter, thus constricting the canal; whereas with this instrument the rubber cone is caught on the outside of the mouth of the cylinder, where several neat circular ridges serve not only for ornament but also for the purpose of retaining it in position.

The ordinary soft-rubber tubing connecting the cylinder and ear-pieces permits of folding, and thus the stethoscope is readily carried in the pocket. Just here we would suggest dropping it into the pocket with the sharply flexed rubber tubing uppermost, so that it will not crease.

When the interior of the bell becomes very dusty, invert the whole instrument under the cold-water faucet, and wash out all the canals.

Thilanine, the new derivative of lanoline by the action of sulphur, is said to be devoid of irritation, and an excellent substitute for Hebra's ointment in many dermatoses. The imported article is now to be obtained in this city.

Medical Items.

Contagious Diseases—Weekly Statement—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending July 9, 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	16	8
Scarlet fever	77	7
Cerebro-spinal meningitis	2	5
Measles	270	24
Diphtheria	61	20
Small-pox	2	2
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0
Mumps	0	0

Surgery in Paris and London.—A correspondent of the *Northwestern Lancet*, writes: "Since writing you last I witnessed several other hysterectomies by Péan, always conducted after the same method, advancing ahead of the knife or scissors with his forceps and applying them upon the broad ligament before severing it. When others would remove only the ovaries, Péan sacrificed the uterus and its appendages, claiming, no doubt with justice, the little value of the organ, the ovaries being gone, and the frequent presence of chronic metritis, as a justification for his procedure. I had the good fortune to witness this operation performed by the veteran L'Abbé, and also by that young and brilliant surgeon, Pozzi, whose latest work on gynecology is known to your readers. L'Abbé's methods have nothing remarkable to notice, but Pozzi advances before the knife with strong ligatures upon the broad ligament. I found in London that the vigorous attention to asepsis observed in France is not by any means followed, instruments being taken from their cases, dipped as a matter of ceremony in the bath, and used without further precaution. At the London Hospital a French physician at my side expressed his surprise, but admitted he had been informed that the English surgeons are no longer observers of surgical cleanliness, and that Lister was the dirtiest of them all. Of the city hospitals I visited, London impressed me as being the richest in material. In one afternoon I found posted for operation two abdominal sections, one sarcoma of the humerus, one popliteal aneurism, one rodent ulcer, and an exploration of the hip-joint. The operation for the relief of the sarcoma was a truly formidable one, consisting of, in the first place, cutting through the clavicle, then tying the subclavian artery, and finally amputating the shoulder, carrying with it all the scapula and its muscles. In London the assistants gather about the patient like house-flies over a speck of carrion, so that absolutely nothing is seen by the supposed spectators, and the method of how not to learn anything is admirably illustrated. In France the internes so conducting themselves would be hissed by the students and quickly brought to time by the surgeons, but in London the seekers after knowledge sit apathetically viewing the house surgeons' backs, and generally desert the amphitheatre after the first surgical procedure. In fact, this thing alone nullifies what practical instruction is given, and served for me as a constant subject of surprise."

The New Rifle-Bullets.—Professor von Bardeleben has been studying the effects of the rifle-bullets used in modern rifles. The new projectile has an inner core of lead, but this is inclosed in a casing of steel, which prevents the lead, even when softened by conversion of motion into heat, from becoming deformed and enlarged at the point of contact with the wound. This change is of much interest for military surgery. The weight of the new 8 millimetre projectile is much less than that of any of the old bullets. It is to its higher rate of velocity and pointed shape that its greater perforating power must be ascribed. Owing to the immense velocity it preserves in its flight, and its small surface of contact, it meets with little resistance on striking a person, causes little commotion of the neighboring parts, has no time to stretch the various tissues it encounters, and merely punches out a hole, carrying the contused elements before it clean out of the wound, without seriously damaging the surrounding wall of the track. The wound is thus left in a fit state for healing by first intention, as no contused parts remain for removal by sloughing. But on the battle-field this absence of contusion, which frequently stayed the bleeding of injured vessels, must lead to more frequent deaths from hemorrhage. Again, in former wars bullets which had been fired from great distances were found to strike the chest or other parts of the body, perhaps to break a bone, and then to glance off or rebound without penetrating farther. This is now impossible; a projectile coming from enormous distances, if it wounds at all, has sufficient power to pass through, cutting any vessels or organs it may meet in it way. Colonel Boonen-Rivera, reporting on the civil war in Chili, where he held the post of Brigade Commander, says that the number of dead on the battle-field was many times—according to his observation four times—larger than that of the wounded. This is the only war in which the new Mannlicher rifles with steel-covered projectiles has been used.

The Barnes Medical College is the name of a new institution lately chartered for the teaching of medicine in St. Louis. Dr. C. H. Hughes, late Professor of Neurology, Psychiatry, and Electro-therapy in the Marion Sims College of Medicine, of St. Louis, is president of the faculty. Dr. Pinckney French, late of the Marion Sims, is secretary. The institution was named after the late Mr. Robert A. Barnes, of St. Louis, who was well known for his many benefactions to charitable and educational institutions. In his will he left more than a million dollars to endow a hospital to bear his name, and to be under the charge and supervision of the Methodist Church.

Rules for the Care of Infants.—The following are the instructions which the summer corps of physicians of the Board of Health distribute throughout the tenement-house districts during their visits. They are printed in English, German, and Italian. "Overfeeding does more harm than anything else; nurse an infant a month or two old, every two or three hours. Nurse an infant of six months and over, five times in twenty-four hours, and no more. If an infant is thirsty, give it pure water, or barley water, no sugar. On the hottest days, a few drops of whiskey may be added to either water or food; the whiskey not to exceed a teaspoonful in twenty-four hours. Boil a teaspoonful of powdered barley (ground in coffee grinder) and one-half pint of water, with a little salt, for fifteen minutes, strain, then mix it with half as much boiled milk, add a lump of white sugar, size of a walnut, and give it lukewarm from a nursing-bottle. Keep bottle and mouthpiece in a bowl of water when not in use, to which a little soda may be added. For infants five or six months old, give half barley water and half boiled milk, with salt and a lump of sugar. For older infants, give more milk than barley water. In hot weather, if blue litmus paper applied to the food turns red the food is too acid, and you must make a fresh mess, or add a small pinch of baking soda. Infants of six months may have beef tea, or beef-soup once a day, by itself, or mixed with other food; and when ten or twelve months old, a crust of bread and a piece of rare beef to suck. No child under two years ought to eat at your table. Give no candies, in fact, nothing that is not contained in these rules, without a doctor's order. Summer complaint comes from overfeeding, and hot and foul air. Keep doors and windows open. Wash your well children with cool water twice a day, or oftener in the hot season. Never neglect loose-

ness of the bowels in an infant; consult the family or dispensary physician at once, and he will give you rules about what it should take and how it should be nursed. Keep your rooms as cool as possible, have them well ventilated, and do not allow any bad smell to come from sinks, garbage-boxes, or gutters about the house where you live. See that your own apartments are right, and complain to the Board of Health, 301 Mott Street, if the neighborhood is offensive. Where an infant is cross and irritable in the hot weather, a trip on the water will do it a great deal of good (ferryboat or steamboat), and may prevent cholera infantum."

It is Proposed to erect a monument to M. de Quatrefages, the well-known French naturalist, whose death occurred recently, and a committee has been formed at Vallerangue, his birthplace, for obtaining subscriptions for this object.

Skatalogical Medicine.—In China pills made from the dung of the Grand Lama of Thibet are used as infallible antidotes to disease. Dr. Mew, of the United States army, recently had the opportunity of analyzing some of them, and he stated that he found "nothing at all remarkable" in them. These sacred pills had been preserved in a silver reliquary, elaborately chased and ornamented, and they came into the possession of Mr. W. W. Rockhill, Secretary of the Legation of the United States in Pekin, through whom they were transmitted to Dr. Mew. Strange as this may seem to those who have not studied the subject, it is not at all remarkable to the ethnologist. Human and animal dung has always been a favorite medicine in some quarters of the world. Such things are never considered disgusting, the Grand Lama offers his excrement to a suffering world as a precious remedy, and the material is provided with great and solemn ceremonies and many prayers. It is not considered by any means a mere excrement, but as a symbolical alvine dejection of miraculous virtue. From the days of Pliny the dung of almost every kind of animal has been used in medicine. Dog dung mixed with honey was prescribed for sore throat, and wolf dung as an anti colic. Goat dung was considered of great value in tumor of the spleen, and cat dung for gout in the feet. Lion dung was an anti epileptic, and mouse dung in the constipation of children. Dr. Jacob Hunerwolf, in 1694, actually wrote a treatise on mouse dung as a laxative, in which he very highly extolled the remedy. Human urine is considered in many places as a most valuable tonic medicine. Daniel Beckherius, in his "Medicus Microcosmus," published in London in 1660, recommends a drink of one's own urine, taken while fasting, for obstruction of the liver and spleen, for dropsy and jaundice. The urine of boys was recommended in fevers, and a "spirit of urine" was distilled for the gout. Boyle, the great philosopher, esteemed human urine so highly as a medicine that he declared that a full account of its virtues would fill a volume. Dr. Neale, in the *Practitioner*, November, 1881, p. 343 *et seq.*, wrote a paper on urine, and compared it with beef-tea and Liebig extract. "Many writers have endeavored to impress the public and the profession with the true value of beef-tea, namely, that it is not a nutrient but a stimulant, and that it mainly contains excrementative materials." Dr. Brown-Séquard's remedy for the invigoration of the aged and debilitated would not be considered at all remarkable by those savage Australians of whom Mr. P. Beveridge tells in his "Aborigines of Victoria and Riverina." Pliny mentions the use of human semen as a medicine, and Avicenna prescribed it for gout. Paullini advises the dirt from soiled stockings as a remedy for epistaxis (p. 52). Dried and powdered afterbirth was used as an anti-epileptic, and secundines were used for the same purpose. The curious investigator of the odd proposals and practice of men of medicine and medicine men will find in Captain Bourke's "Scatological Rites of All Nations" a vast amount of information on this and kindred subjects. He has compiled his great work from one thousand authorities, and though not intended for general perusal, it is one that will interest and inform those at least who consider that the "proper study of mankind is man."—*British Medical Journal.*

Vital Statistics of Total Abstainers.—It is interesting to learn that the annual report of the United Kingdom Temperance and General Provident Institution for 1891 confirms the experience of the previous twenty-five years. In the Temperance Section the expected deaths were 321, and the actual deaths 240, or 70.8 per cent.; in the General Section the expected deaths were 386, and the actual deaths 425, or 110.1 per cent. The total deaths in the twenty-six years in the Temperance Section were 3,663, that is 70.7 per cent. of the 5,177 expected deaths; in the General Section they amounted to 7,934, or 97.5 per cent. of the 7,277 expected deaths.

The Third Intercolonial Medical Congress will be held in Sydney, New South Wales, in September next. The two previous ones were held in Melbourne and Adelaide.

BOOKS RECEIVED.

Proceedings of the New York Pathological Society for the Year 1891. 8vo. 99 pages.

How to Feel the Pulse, and What to Feel in It. By William Ewart, M.D. 12mo. 112 pages, illustrated. Price, $1.25. Wm. Wood & Co., New York.

Elements of Materia Medica and Therapeutics. By C. E. Armand Semple, B.A. 12mo. 480 pages, illustrated. Price, $3.00. Longmans, Green & Co., New York.

The Diagnosis of Diseases of the Nervous System. By Christian A. Herler, M.D. 12mo. 628 pages, illustrated. Price, $3.00. G. P. Putnam's Sons, New York.

Spectacles and Eyeglasses. By R. J. Phillips, M.D. 12mo. 97 pages, illustrated. P. Blakiston, Son & Co., Philadelphia, Pa.

A Study of Influenza. By Richard Sisley, M.D. Second Edition. 8vo. 119 pages. Longmans, Green & Co., New York.

Hospitals and Asylums of the World. By Henry C. Burdett. In four volumes and portfolio; Vol. I., Asylums—History and Administration. 701 pages. Vol. II., Asylum Construction, with plans and bibliography. 348 pages. Royal 8vo, illustrated. J. & A. Churchill, London.

Materialism and Modern Physiology of the Nervous System. By William H. Thompson, M.D. 12mo. 112 pages, illustrated. G. P. Putnam's Sons, New York.

Proceedings of the Philadelphia County Medical Society. Volume XII. Session of 1891. T. B. Schneideman, M.D., Editor. 8vo, 459 pages.

Transactions of the Southern Surgical and Gynecological Association. Volume IV. Fourth Session. 8vo, 376 pages, illustrated.

A System of Practical Therapeutics. Edited by Hobart Amory Hare, M.D., assisted by Walter Chrystie, M.D. Vol. III. Royal 8vo, 1352 pages, illustrated. Lea Brothers & Co., Philadelphia, Pa.

Homœopathic Bibliography of the United States, from the year 1825 to the year 1891, inclusive. Compiled and arranged by Thomas Lindsley Bradford, M.D. 8vo, 596 pages, illustrated. Boericke & Tafel, Philadelphia, Pa.

Treatise on the Diseases of Women. By Alexander J. C. Skene, M.D. Second Edition, revised and enlarged. Royal 8vo, 968 pages, illustrated. D. Appleton & Co., New York.

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INTESTINAL OBSTRUCTIONS — DIAGNOSIS AND TREATMENT.[1]

BY FREDERICK HOLME WIGGIN, M.D.,

NEW YORK.

ATTENDING SURGEON CITY HOSPITAL, BLACKWELL'S ISLAND; VICE-PRESIDENT LITCHFIELD COUNTY MEDICAL SOCIETY; MEMBER CONNECTICUT STATE MEDICAL SOCIETY; MEMBER NEW YORK COUNTY MEDICAL SOCIETY; VICE-PRESIDENT ALUMNI ASSOCIATION BELLEVUE HOSPITAL; FELLOW NEW YORK ACADEMY OF MEDICINE; MEMBER AMERICAN MEDICAL ASSOCIATION; HONORARY MEMBER GERMAN CONGRESS OF SURGEONS.

MR. PRESIDENT AND FELLOWS OF THE CONNECTICUT MEDICAL SOCIETY: There is perhaps no subject of as much interest to both the physician and surgeon as that of intestinal obstruction. No subject has been more thoroughly discussed, and on none has there been such unanimity of opinion among modern surgical writers as upon the diagnosis and treatment of intestinal obstruction. Had this teaching led surgery to another brilliant triumph over one of her most malignant foes, there would now be no excuse for again travelling so well worn a road. But it is because of her comparative failure that it is timely to again review our knowledge of this subject, and to find out, if possible, the cause of her comparative defeat on what appeared the eve of victory. Are the teachers of surgery wrong in their views? Was Praxagoras wrong, three and a half centuries before Christ, when he advised laparotomy for "the Iliac Passion?" Was the young army surgeon referred to by Bonet wrong when, more than a century ago, in France, he pushed aside the attending physicians, after they had exhausted all the resources of their art, and saved the patient's life by performing the first recorded laparotomy for intussusception? Is the operation *per se* so dangerous? The gynecologists have answered this in the negative. Is the skill of the general surgeon at fault? This may be answered by saying that the most eminent operators have met with failure almost as often as men of less renown. We must look elsewhere for the reason of the comparative failure in this branch of surgery. It is evident from the personal experience of us all, and from a perusal of the journals, that the general practitioner has been too slow in accepting the teachings of modern surgery and in coming to believe that, in urgent cases, medical measures are of no avail, and that the timely operation, as Dr. Jacoby aptly puts it, is the only rational expedient. It is this reluctance to give up the old methods for the new that has too often made laparotomy undertaken for the relief of intestinal obstruction, as a recent writer has said, an "ante-mortem," rather than a "post-mortem, examination." Why is it that Tait, Mann, Polk, Lusk, Cleveland, Price, Kelly, and others in gynecology, and McBurney in appendicitis, are able to report long series of cases with an insignificant mortality, while the general surgeon, with a class of cases which, taken in time, require no graver procedure for their relief, still shows a disheartening mortality? Possibly the report of a few cases taken from the journals of the past year, and some which have come under my own observation, will shed some light on this subject.

CASE I. *Laparotomy for Gall-stones after Five Days' Delay.*—Dr. Barrows reports the following case:[2] Mrs. P——, aged sixty eight, became ill with pain in the abdomen and vomiting; was treated vigorously with purgatives and enemata without result for several days. Vomiting having become stercoraceous, though temperature and pulse were normal, diagnosis of intestinal obstruction was made, and Dr. Barrows called in consultation. Although no nourishment had been retained the same treatment was continued, with addition of the long rectal tube. On the following day the patient seemed slightly better. Slight dulness on percussion, four inches to the left of umbilicus, was found. The next day, patient seeming worse, and not having taken food for five days, operation was proposed and performed. Obstruction was found to be due to a gall-stone three and five-eighths inches in circumference. Death followed six hours later. Says Dr. Barrows: "Had operation been performed when I first saw the case, the termination might have been different. I feel that procrastination was unjustifiable, and proved to be a fatal mistake."

CASE II. *Volvulus Treatment—Long Rectal Tube—Death.*—In a recent journal a writer reports a case of acute intestinal obstruction. Diagnosis of volvulus made early. He remarks: "Case lasted sixteen days, and then patient died of exhaustion after faithful trials of the long rectal tube. The autopsy confirmed my diagnosis."

CASE III. *Volvulus of Small Intestine—Laparotomy after Three Days' Delay—Death.*—Dr. Shafler reports a case[1] of volvulus of the small intestine in a child, aged two, in whom the symptoms of intestinal obstruction were marked for three days. During this time no nourishment was retained. Energetic treatment, consisting of purgative injections of air and water, which added to the patient's misery and produced no result. When the child was thoroughly exhausted laparotomy was performed. Obstruction was found and relieved. The patient died in two hours. "I think," says Dr. Shaffer, "we waited too long, trusting to other means."

CASE IV. *Volvulus of Lower Ileum—Delay—Laparotomy, followed by Death.*—Dr. Pennington reports a case of volvulus of lower part of the ileum.

A young woman, who after severe exercise was taken with severe abdominal pain, vomiting, constipation, tympanites; energetic medical treatment followed, which having failed, and the patient's condition growing rapidly worse, after much delay laparotomy was performed, the patient being so weak that heart failure was feared during the operation. Death followed in eight hours. "The lesson of this case," says Dr. Pennington, "is the unwisdom of delay when urgent symptoms exist. My regret is that we did not operate while patient had the strength to bear it."

CASE V. *Of Intestinal Obstruction—Died from too much Medical Treatment*—Dr. C. H. Dalton,[2] of St. Louis, in a paper read before the American Medical Association in 1891, says: "Surgeons find it difficult to convince the average physician that in a serious case of intestinal obstruction peritonitis can exist with a normal or subnormal temperature." He was called in consultation in a case of intestinal obstruction. He advised operation, but the family physician objected because the patient's temperature was 99½° F. He pointed in vain to the patient's anxious countenance, to the great tenderness on pressure, tympanites, vomiting, and rapid pulse, as well as to the fact that purgatives were of no avail; but the physician insisted on one more dose of salts, and, adds Dr. Dalton, "it was given. It did not

[1] Read at the Centennial Meeting of the Connecticut Medical Society, at New Haven, May 25, 1892.

[2] American Gynecological Journal, vol. i., p. 403, August 20, 1891.

[1] Medical News, January 9, 1892.

[2] Ibid., January 23, 1892.

move the bowels, but it did move the patient to that place from which no traveller returns."

CASE VI. *Intussusception — Delay — Laparotomy — Death.*— In a case reported by Dr. B. F. Curtis,[1] the patient arrived at the hospital three days after symptoms which pointed to some grave intestinal trouble had appeared. The diagnosis of acute perforating peritonitis or intussusception was made after patient reached the hospital. Some symptoms pointed to one condition, some to the other. On opening the abdomen an intussusception was found involving eight inches of the ileum, four inches of which was in poor condition and was placed in the abdominal opening. Patient died five hours later, but bowels moved before death. Says Dr. Curtis: "Case showed that adhesions and pathological changes might be slight after intussusception had lasted several days. It also illustrates the need of early operation. Had operation been done twenty-four hours earlier, patient would probably have lived." He also cites another case which proved that a critical collapse might occur so quickly that in a short interval a patient might fall from a favorable to a hopeless condition. "The dilatory course pursued both by surgeon and physician, and especially of the latter, often proves fatal to the patient." The following two cases came under my observation at one of the New York hospitals this winter.

CASE VII. *Intestinal Obstruction due to Strangulation by Diverticulum—Four Days later Laparotomy, and Death.*—A child, aged three, was taken sick November 24th, with the following symptoms: Severe pain, vomiting, high temperature, absolute constipation, and severe prostration. The attending physician was unable to make a diagnosis. On the 28th the child reached the hospital, where a diagnosis of intestinal obstruction was made. On examination no tumor could be found. Temperature in the rectum was 103½° F., marked tympanites. Laparotomy was performed at once. Intestines were found to be constricted by a diverticulum located above the appendix, the free end of which (diverticulum) being adherent to parietal peritoneum, formed a loop through which nearly all the small intestines passed, and had become strangulated. The diverticulum was ligated and removed. The intestines could not be returned. They were incised, and gas and fecal matter allowed to escape. Openings in the intestines were then closed by Lembert sutures. All this added immensely to the length of the operation. Death followed five hours later. This case also teaches the folly of delay.

CASE VIII.—Patient, a male, about thirty-five years of age, was taken sick March 15th, with a severe chill. On the following day localized pain in right iliac region, high temperature, rapid and feeble pulse, persistent vomiting, slight diarrhœa. No diagnosis had been made when the patient reached the hospital on the 19th. On examination diagnosis of appendicitis with perforation was made. Temperature was 105° F.; pulse was 140. The vomiting was arrested by irrigation of the stomach. Laparotomy. On opening peritoneum large amounts of pus welled up. The appendix was removed, but perforation was not found. As patient did not bear anæsthetic well, further search could not be made. The general cavity was irrigated with sterilized water, and wound was packed with iodoform gauze. Hypodermics of strychnia sulphate given. Patient died nine hours later. The four days' delay was fatal to this patient.

CASE IX. *Appendicitis Complicatea by Pregnancy.*—In a case of appendicitis complicated by pregnancy, reported by myself in the MEDICAL RECORD some time since, the patient had marked symptoms of appendicitis, a diagnosis of which was made early. At the request of friends consultations were held morning and night for several days. The diagnosis was not confirmed, because the practitioners were not sure as to the cause of intestinal obstruction, therefore a consent to operation could not be obtained. Perforation and septic peritonitis soon followed. Patient died of exhaustion and sepsis on the fifth day. Autopsy confirmed the diagnosis of perforation, which was caused by fecal concretion. The appendix was not adherent and could readily have been removed. This case again shows the folly of delay, and of the morning and evening consultations, repeated daily for several days, while the patient is rapidly drifting into a condition where operative procedure will be of no avail.

[1] MEDICAL RECORD, October 23, 1891.

CASE X. *Rupture of Ileum—Five Days' Delay—Laparotomy—Death.*—Late on the evening of May 28, 1891, I was called in consultation to see H. W——, aged fourteen, whose physician gave me the following history: On the 23d the boy received a kick in the right lumbar region. The pain, though severe at first, soon passed away. On the evening of the 24th he was suddenly seized with a severe colicky pain, nausea, and vomiting. On the 25th the family physician was sent for. He gave large doses of morphia, magnesia sulphate, enemata, etc., but the constipation was absolute. Finally, as he was losing ground, five days after the accident I was called, and on examination found no external marks of violence. The abdomen was tympanitic, and there was tenderness on pressure at a point two inches to the right of umbilicus. The general abdominal pain had disappeared, vomiting had ceased, constipation was absolute. The temperature was 99½° F.; pulse, 130; respiration, 30. Diagnosis of intestinal rupture and general suppurative peritonitis. Although the prognosis was unfavorable, I advised operation as the patient's only chance. As soon as practicable laparotomy was performed. On opening abdominal cavity the diagnosis was confirmed. A large amount of pus was found in cavity, rupture was closed by Lembert sutures. Abdominal cavity was washed out, first with boiled spring water, and was followed by a weak solution of hydrogen dioxide. Anæsthesia was badly borne. Operation was prolonged by the great intestinal distention, necessitating several incisions to allow gas and fecal matter to escape before they could be returned to the cavity. Could this operation have taken place sooner, the result might have been different.

Diagnosis.—The difficulty is not that the physician cannot decide that there is an acute obstruction, but that the doubt too often arises in his mind of his ability to determine the cause of it, which to him seems of absolute importance, before he is willing to decide on a definite course of action.

The text-books give so many divisions and subdivisions of this subject that this confusion of mind is not to be wondered at, but it too often has been the cause of disaster. If we can show that this refinement of diagnosis is unnecessary, then many of the difficulties which now beset us will have been removed, and many valuable lives be saved. Perhaps this end can be reached by adopting the classification suggested by Bryant,[1] in which cases are grouped by similarity of symptoms and indications for treatment, instead of by causation. This classification is as follows:

1st. Internal strangulated hernia. This includes cases of: *a*, Congenital malformations; *b*, intussusception; *c*, strangulation by bands, diverticula, etc.; *d*, volvulus; and I would add, *e*, some cases of appendicitis.

2d. Cases in which acute symptoms are engrafted on chronic cases, such as: *a*, Cancer of rectum or colon; *b*, syphilitic, tubercular, or simple ulceration.

3d. Cases that cannot be classified, the nature of which is obscure. This includes: *a*, Fecal impaction of cæcum or colon; *b*, cases due to localized peritonitis, the result of injury or extension of inflammation from pelvic or other organs; *c*, cases where operation has been proposed and declined by patient and friends, etc.

Symptoms of Obstruction.—Let us consider the symptoms on which we must depend to make a diagnosis in our first group. They are pain, vomiting, collapse, con-

[1] Lecture on Treatment of Intestinal Obstruction, London *Lancet*, 1891, vol. i., pp. 128–130.

stipation, and tympanites. Given this group of symptoms, we may be sure that we have to do with a case of external or internal strangulated hernia. The former can be excluded from consideration by a careful examination of the usual locations of external hernia.

Differential Diagnosis.—Although it is one of the objects of this paper to demonstrate that the differential diagnosis between members of the first group is of minor importance, it may be remembered that the distinction can frequently be made by a careful consideration of the following individual peculiarities, in addition to those symptoms, common to all, which have been already mentioned. Usually congenital malformations can be detected by examination in the neighborhood of the rectum; intussusception, by the age of the patient, eighty per cent. of all cases occurring in children under twelve years of age; strangulation by bands, diverticula, etc., by the history, which is usually that of previous abdominal inflammation, and by the age, which is that of early adult life. Coe, in a recent number of the *American Journal of Obstetrics*, reports a case of this character, following two days after vaginal hysterectomy. Volvulus, again by the age, which is generally that of advanced life, and by the history, which is that of long continued constipation. Finally, we have to consider acute appendicitis, which is most common in adult males. It begins usually with a chill, followed by rise of temperature; the pains, at first general, afterward becoming localized at or about the base of the appendix.

Second Group Symptoms.—In the second group the symptoms of the obstruction already described are also present. The history and previous rectal examinations will determine the diagnosis.

Third Group Symptoms.—In the third and last group the symptoms of obstruction are present, but in a modified degree.

General Symptoms Common to all Varieties.—Having considered the different forms of the diseases under discussion and their symptoms, we may glance briefly at a few general points which are of interest. In all of these cases the temperature taken per os is a most unreliable guide, being often normal, when at the same time, taken per vaginam or per rectum, it may be much above. In some cases the temperature per os has been normal, while per vaginam or per rectum it was from 103° to 105° F. The respirations are generally increased in frequency; the pulse is rapid and weak, and out of proportion to the temperature as taken per os. The character of the pain is a guide as to the completeness of the obstruction—paroxysmal pain indicating incomplete occlusion; continuous pain, absolute obstruction. Anuria is frequently present, and, according to Treves, is due more to the completeness of the obstruction than to its seat. The seat can be more or less accurately determined as follows: The acute symptoms and early stercoraceous vomiting pointing to small intestine, and chronic symptoms to the large.

Fecal Vomiting not a Reliable Guide.—The attention of the profession has been called to fecal vomiting as a pathognomonic symptom of acute intestinal obstruction, by Dr. McGrow.[1] Says Dr. McGrow: "Fecal vomiting is the only pathognomonic symptom of this condition when taken alone, and an indication that relief or death must soon follow." The objections to depending on this symptom is that it is frequently absent, and in children nearly always, and that if we wait for it to occur before deciding as to what had best be done, relief will come too late.

Differential Diagnosis between Intestinal Obstruction and Enteritis.—The diseases which it has been considered important to differentiate from those we have been discussing are enteritis and peritonitis. Enteritis may be confounded with acute intussusception, but it may usually be distinguished by absence of collapse and elevation of temperature.

[1] See article in Philadelphia Medical News.

Peritonitis.—Much of the doubt and delay which in the past have proved so fatal may be directly charged to the difficulty which the general practitioner has had in trying to distinguish peritonitis from acute obstruction, the one being considered a disease requiring purely medical treatment, and the other demanding what has been regarded as a violent and dangerous procedure. Could it be proved that this distinction is unnecessary, much of the difficulty would be removed. The opinion has become general in Europe, and is rapidly growing here, that acute idiopathic peritonitis is of very rare occurrence. In response to some inquiries I have made, I have received the following letters from two well-known pathologists:

Professor Biggs, of the Bellevue Hospital Medical College, writes: "In reply to your question regarding the frequency of so-called idiopathic peritonitis in my autopsies, I would say that in my experience a primary general peritonitis is exceedingly rare. However, occasionally one does see a case of suppurative peritonitis, in which the most careful search does not show any lesion to which it is secondary. These cases, of course, are microbic in origin, and I think are to be considered analogous to similar primary suppurative inflammations of the pleura, pericardium, and pia mater. The course of entrance of the microbe organisms, and the cause of the localization of the germs in such cases, are often questions involved in great obscurity. Primary infectious inflammation of the other serous membranes are much more common than they are in the peritoneum."

Professor Welch, of the Johns Hopkins University, writes: "I have just received your letter asking for my experience regarding the frequency of occurrence of so-called idiopathic peritonitis. I suppose that you refer especially to acute peritonitis; certain forms of spontaneous chronic peritonitis of a non-tubercular character are familiar to me, but I assume that your question does not refer to them. It is not easy to define sharply just what shall be called idiopathic peritonitis. If the term be limited to cases of acute peritonitis, in which there exists in the peritoneum or other organs or parts of the body no disease which might be assumed to stand in a direct or indirect causative relation to the peritonitis, then acute idiopathic peritonitis is certainly a very rare affection. For the establishment of this variety of peritonitis, clinical observation alone is not sufficient; and even when it seems to be established by a careful post-mortem examination, there is always a possibility that some small primary lesion has been overlooked. This makes it difficult to utilize for statistical purposes the cases of so-called spontaneous or idiopathic peritonitis recorded in literature. Nevertheless, it must be admitted that cases of acute peritonitis occur, in which the most careful examination during life and after death fail to reveal any disease outside of the peritoneum which can be supposed to bear any relation to the peritonitis. I have the notes of an autopsy of this character on a young woman with acute purulent peritonitis. If the epithet idiopathic be applied to all cases of acute peritonitis in which the peritoneal inflammation is the sole manifestation of an infectious process, then it cannot be said that idiopathic peritonitis is extremely infrequent. Any pathological anatomist of experience must have met with cases of acute peritonitis developing in connection with cirrhosis of the liver, or with chronic Bright's disease, without any infectious lesion in the body save the peritonitis. Here we may fairly assume that the presence of ascites, or chronic thickening of the peritoneal membrane, or perhaps of waxy degeneration, acts as a predisposing cause, permitting the growth of pyogenic bacteria which would not have multiplied in a healthy peritoneal sac. If we expand still further the limits, as some writers have done, and designate as idiopathic cases of peritonitis occurring with acute articular rheumatism, with distinct local infections, as for instance tonsillar abscess (I have seen such a case of acute peritonitis), then, of course, the category of

cases is still further increased. I should prefer to limit the term idiopathic peritonitis to the first class of cases. It may be said that there is no *a priori* reason why an acute spontaneous peritonitis of an infectious origin may not occur as well as an acute spontaneous osteomyelitis, for example; but, as a matter of fact, the healthy peritoneum, instead of being, as was once believed, one of the least resistant, is one of the most resistant parts of the body against the lodgement and the multiplication of pyogenic bacteria, as has been abundantly demonstrated by experimental work."

According to the gentlemen whose letters we have read, Osler, Martin and Hare, McBurney, Lydston, and others, the most common form of peritonitis is that due to perforation of the appendix in men, or to rupture of a Fallopian tube in women. There is nothing in the clinical history of diffused suppurative peritonitis, except perhaps the pulse, to indicate the degree of infection. In these cases, as in intestinal obstruction, the pulse is out of proportion to the other symptoms. When a rise of temperature occurs in the course of a case of obstruction, it indicates the existence of peritonitis. Absence of this symptom does not prove its non-existence.

Case of Suppurative Peritonitis without Rise of Temperature.—The following case, reported by Dr. J. N. Sturdy,[1] illustrates this point: The case was one of appendicitis in which the patient died forty-eight hours after the beginning of the attack. The autopsy revealed general peritonitis, pus in the abdominal cavity due to two perforations in the appendix, and yet at no time was the temperature per os over 98½° F. If we accept the opinions quoted above, we may conclude that for clinical purposes we are not warranted in wasting much time in trying to decide whether a severe case is one of peritonitis only, or of acute obstruction complicated by peritonitis.

Treatment.—If I have made clear my own views as to the diagnosis in this class of cases, then one of the purposes of this paper has been accomplished, and the indications for treatment for our first group of cases will at once occur to us. We have shown that the symptoms are those of external strangulated hernia, minus the local tumor. Why should the treatment not be the same in one case as in the others? Why should we expect to remove the cause of internal strangulated hernia by the energetic use for hours and days of opium, the long rectal tube, enemata, and purgatives, any more than in the external variety? No cases of obstruction due to a congenital malformation, strangulation by bands, etc., to a volvulus, a perforating appendicitis, recover without operation, and very few of acute intussusception, especially in young children (a large proportion of those that at first recover by spontaneous sloughing dying later).

Having satisfied ourselves, then, that we have a case of internal strangulated hernia with urgent symptoms, whatever its cause, we should proceed as follows: Pain should be relieved with small doses of morphia or phenacetin. Purgatives should in all cases be avoided. The stomach should be washed out with a hot antiseptic solution, one enema only (a large one), under anæsthesia, should be given, the patient being placed in the Sims position, from a fountain syringe, the bag not to be raised over three or four feet in case of children, and six to eight feet in case of adults. This, if it fails to relieve obstruction (intussusception) or proves our diagnosis wrong (fecal impaction), will prove of advantage in clearing out the bowels below the obstruction. The following case illustrates this point:

Case of Intussusception Relieved by Enema under Anæsthesia.—July 9, 1890, I saw in consultation A. H——, male, forty-two years of age, who gave history of constipation, and after a day of unusual hard work (chopping and lifting logs) he was seized with severe remittent pains and persistent vomiting, which continued till I saw him, three days later. On rectal examination a tumor could be made out. Tenesmus was present. Abdomen was tympanitic. Constipation was absolute. Diagnosis of intussusception. The patient was anæsthetized till his muscles were relaxed. He was then placed in the Sims position, with his hips elevated, and a large enema slowly given from a fountain syringe and forcibly retained till patient recovered consciousness, when he complained of a severe pain. After enema was passed, tumor could not be felt through the rectum. In a few hours bowels moved freely, and the attending physician reported his recovery as uneventful. In case the enema produces no result, it should be followed, with the least practicable delay, by laparotomy. If bowels are much distended, they should be incised opposite mesenteric attachment, and fecal matter and gas allowed to escape. This wound should be then closed, and abdominal cavity irrigated with a normal salt (six per cent.) solution, and the abdominal wound closed.

Treatment of Collapse.—If, on being called to a case, we find the patient collapsed, we should delay, and with small doses of morphia, stimulants, and rest, try to rally our patient, till he reaches a condition to bear the operation.

The following case, reported by Dr. McBurney,[1] illustrates this point: On December 5, 1891, R. W——, physician, aged fifty-six, with previous history of constipation and small tumor in right loin, was seized at 2 P.M. with agonizing pains. At 5.30 P.M. this was relieved by morphia. Temperature, 100° F. At 7 P.M. patient complained of constant pain, which was markedly increased by the slightest pressure at a little above the base of the appendix. Temperature was $102\frac{5}{10}$° F. The pulse was weak, and other well-marked symptoms of shock were present. Three hours later his condition was the same. Diagnosis of perforative appendicitis was made, and during the night patient was treated for shock. The next morning his condition had gradually improved, temperature being 101° F., pulse stronger and 86, and operation was successful.

Enterostomy.—If the case is one in which great prostration and delay have been combined, then enterostomy and irrigation only are indicated. This can be done, as advised by Gregg Smith and others, under cocaine anæsthesia or a minimum amount of ether. After the operation, if the patient is exhausted, if the vomiting has been controlled, early feeding and stimulation by mouth can be employed to advantage. Otherwise this should be done by rectum. Of the treatment in the second group, wherein acute attack is engrafted on a chronic case, little need be said. Indication would be for inguinal or lumbar colotomy as soon as acute symptoms develop. In the third group the symptoms are not as urgent, and we may consider a little longer what our course should be. Medical measures here will in some cases relieve our patient, although in others they will only smooth his path to the grave. In cases of fecal impaction, which are the ones most frequently met with, it is wise first to relieve the pain with morphia and atropia. This should be followed by a large enema of hot water. Many cases of subacute appendicitis recover temporarily. Therefore, when called to see such a case, the question will often arise, Shall we operate or trust to medical measures? While no general rule can be laid down, and each case must be studied carefully, and the question decided on its own merits, we may say that if the symptoms do not show signs of yielding after forty-eight hours of medical treatment, or if there is a history of constantly recurring attacks of the same nature, we should operate. We can never know when a mild case may become one of the greatest malignity, and the time for aid be passed. If it is justifiable to open the abdominal cavity for the correction of a uterine displacement, and for other conditions that involve no danger to life and are simply producing discomfort, are we not more than justified in performing the same operation to clear up a diagnosis in a doubtful case? In such a case, if a

[1] MEDICAL RECORD, February, 1892.

[1] MEDICAL RECORD, April 16, 1892.

mechanical cause exists, the danger to life is great. The autopsy too often shows that the patient might have been saved had we had the courage, on recognizing that some grave abdominal trouble existed, to have performed an operation which, in proper hands and at a proper time, involves little danger. Such an operation would enable us to ascertain whether the trouble was due to a remedial cause or to that rare condition, acute idiopathic peritonitis, complicated by intestinal paralysis. Even in that case, the danger would probably be lessened rather than increased by irrigation. Says a recent writer: "We must constantly bear in mind both sides of the shield. There is danger in performing laparotomy for intestinal obstruction, but there is also danger in postponing it until it must be undertaken as a last resort."

Septic Peritonitis.—The question now arises, does the occurrence of septic peritonitis in these cases contraindicate operative interference? Lawson Tait says: "Whenever I find myself in the presence of localized or general peritonitis, whatever may be the cause, I open the abdomen and treat indications furnished by actual inspection. Peritonitis in abdominal cases is in effect a most powerful indication for surgical interference." Treves, Bantock, and Tait report successful cases of abdominal section for acute puerperal peritonitis. Lawford Knaggs[1] reports a case of successful laparotomy for the relief of acute diffused peritonitis following intestinal obstruction.

Osmolonsky, of St. Petersburg, reports thirteen cases operated on for septic peritonitis due to bursting of intra-abdominal abscess or tumors. Three cases died. Mortality was twenty-seven per cent. He says: "Collapse in these cases does not contra-indicate operation, as Eschers, Wylie, and Hall have saved patients operated on in this condition.

Mickulicz[2] reports seventy-four cases operated on for septic peritonitis, and thirty-eight recoveries. Mortality, thirty eight per cent. And Boully[3] reports twelve desperate cases with six recoveries, mortality fifty per cent.

Dr. Robert Abbe stated in a recent meeting of the New York Academy of Medicine that he had operated on three or four cases in which recovery had taken place, notwithstanding the fact that general suppurative peritonitis was present. He employed thorough drainage by means of openings in the loins. Believing it would be of interest to get the results of recent work in this field, I have communicated with a number of distinguished surgeons, asking what their results had been after laparotomy for general septic peritonitis, and their practice as to drainage and irrigation, and their replies are as follows:

Dr. Andrew McCosh, surgeon to the Presbyterian Hospital, New York, writes: "My results after laparotomy for general suppurative peritonitis have been far from brilliant. One case only has recovered out of perhaps ten patients operated on. Still all the cases have been desperate and absolutely hopeless without operation. The last case you heard me describe lived fifteen days and then died. I have drained in about half the cases, and washed out every two hours the peritoneal cavity. The general cavity is shut off in all cases in from twenty-four to seventy-two hours, so that drainage after the second day accomplishes nothing. I have never used hydrogen dioxide in the general cavity."

Dr. Clement Cleveland, surgeon to the Woman's Hospital, New York, writes: "I have never saved a case of general suppurative peritonitis. Have had but few."

Professor Senn, of Chicago, writes: "I have had several cases of general suppurative peritonitis which recovered after laparotomy, flushing, and tubular drainage. The chronic cases usually recover under such treatment."

Professor J. D. Bryant, of Bellevue Hospital, New York, writes: "In cases of general suppurative peritonitis following intestinal obstruction, or gunshot wounds where extravasation of fæces has taken place, my mortality has been one hundred per cent. I have operated on one case only of general suppurative peritonitis due to other causes. I washed him out freely twice daily with bichloride solution one to five thousand. Patient improved for a time; fever disappeared; suppuration became less, although it continued freely to the end; then died, three weeks later, of exhaustion."

Professor Wyeth, of the Mt. Sinai Hospital, writes: "I do not recollect a single case of recovery after operation for well-established general suppurative peritonitis. Have never drained or washed out every hour or two. In perforation of appendix have saved one case, but peritonitis was not yet general. One case of rupture of gall bladder, with general peritonitis just beginning. I sewed the gall-bladder to abdominal incision and drained it; opened abdomen in linea alba half-way between navel and pubis, and drained by tube. Irrigated general cavity with hot Thiersch solution. Patient recovered. One case of obstruction due to appendicitis with abscess. Opened gut, made artificial anus above obstruction. Opened abscess per vaginam. Closed artificial anus two weeks later. Patient got well and is well, three years afterward."

As the case of appendicitis referred to illustrates the advantage of prompt surgical aid in these cases, I will briefly give its main points. Dr. Baruch[2] says: "Mrs. R. S—— was taken sick twenty-four hours before I was called, having previously been treated for peritonitis by salts and morphia; the temperature was 100° F. Tenderness (exquisite) in right iliac region. Diagnosis of perforating appendicitis was made. I urged sending for a surgeon, but the last train had departed. I insisted on a special train, and Dr. Wyeth arrived at 11 P.M. Peritoneum was opened, and digital examination for adhesions caused a gush of pus. Elongated inflamed appendix was found containing a fecal concretion. Appendix was perforated. This was removed, the general cavity washed and drained, and the wound packed. Pulse, respiration, and temperature fell within an hour. Patient made a rapid recovery."

Dr. J. William White, of Philadelphia, writes: "My experience in laparotomy for general suppurative peritonitis has been, as a general rule, very unsatisfactory. In most instances the cases I have operated upon have been consecutive to rupture of the appendix, or to a rupture of a pyosalpinx, and in the majority of them I have been called in when the patient had septic paresis of the intestines, a swollen and distended abdomen, and evidences of profound shock and general sepsis. I have not time to refer to my notes, but I am under the impression that no less than ninety per cent. of such cases have resulted fatally. The results, however, when peristalsis is still good and the belly is flat, and shock is moderate or absent, have been good; I have found that irrigation at the time of the laparotomy, drainage by tube, and syphonage have appeared to meet all the indications. I have only rarely washed out the abdomen through the tube, nor do I believe it to be of much value, as adhesions form so rapidly that a general irrigation becomes impossible within a few hours after the laparotomy is completed. I have never used the peroxide of hydrogen in the general abdominal cavity in this or in any other case."

Dr. Joseph Price, of Philadelphia, writes: "I have done a large number of abdominal sections for general suppurative peritonitis. My results have been very satisfactory. I mean that I have saved about fifty per cent. of the cases; as they all seemed absolutely hopeless without surgical interference, I feel that the percentage saved is fairly good. Some were puerperal; some followed criminal abortions; others suppurating cysts or dermoids; others due to punctures, and a few to appendicitis, leak-

[1] British Medical Journal, April 19, 1891.
[2] Congder: Deutsch Gesel. f. Chirur., Berlin. Klin Woch., June 10, 1889.
[3] Le Bulletin Medical, October 13, 1889.
[1] MEDICAL RECORD, April 30, 1892.
[2] Ibid.

age or rupture of abscess about the head of the cæcum. My surgery has been rapid and simple. A free incision, free separation of all adherent viscera; even the delicate lymph-adhesions I free rapidly to the exposure of the mesentery on both sides, followed by free douching with pure clean warm water; the flushing and douching always followed by drainage, generally glass, sometimes rubber and gauze. I have a few times done the open treatment with rubber and gauze drainage. The primary douche ends all irrigation. I have never used solutions of any description. I practised the open treatment for purulent peritonitis long before Hebra read his paper on the subject. My practice has been, in the desperate class of cases you are writing about, first to attempt to save life, later, if you save the patient, do ideal surgery. The attendant physician has exhausted all his resources and says to the family, "I have done all I can do," and turns them over at the eleventh hour to us. Surely, the patient is dying, and we cannot do ideal surgery on a dying patient, so I feel it wise to only irrigate and drain. Finish your work later, if you save your patient."

Professor William S. Halsted, of the Johns Hopkins Hospital, Baltimore, Md., writes: "We have cured only two cases of general suppurative peritonitis. Test-tube inoculations were made from the abundant purulent exudation which existed in both cases. In one, the staphylococcus pyogenes aureus, and in the other the bacteria coli, was found. Appendicitis was the cause of the peritonitis in both cases. Both patients died eventually with complications of acute nephritis in one case, and pericarditis, pleuritis, and chronic Bright's in the other. At the autopsies test-tube inoculations were made from the peritoneal cavities, but the tubes remained sterile. There was no exudate from the peritoneal cavity, and except for a slight injection of the peritoneum, there was nothing to indicate that peritonitis had existed in either case. The treatment in both cases was a very thorough washing with a sterilized six-tenths per cent. salt solution. In one case the washing was conducted through two incisions. It is, of course, absurd to attempt to drain the peritoneal cavity, for in a very few minutes the intestines become adherent to whatever is introduced for drainage, and adhering to each other, completely shut off the general peritoneal cavity. To disinfect the peritoneal cavity is also impossible. We have found that irrigation of the peritoneal cavity of dogs with a solution of corrosive sublimate as weak as 1 to 606,000 is fatal. Irrigation with plain water deprives the serosa instantly of its cells, but the so-called physiological salt solution is tolerated very well. You are familiar, of course, with the works of Mikulicz, Reine, and Reichel, and one or two others, who claim that it is better to wipe out the peritoneal cavity than to wash it. I fail to see anything in their experiments which justify such a conclusion in general suppurative peritonitis. The wiping surely offers a greater insult to the serosa than does the irrigation with the salt solution. If the effusion is circumscribed, I can readily believe that it is better to wipe it away than to flood the general cavity."

Dr. M. D. Mann, of Buffalo, writes: "'The existence of purulent peritonitis, however induced, is a clear indication for abdominal section,' says Gregg Smith. This, while generally admitted to be true, has been rarely acted upon on this side of the water. Why should not pus in the abdominal cavity be let out as well as in the pleural cavity? Nor does it make any difference what the origin of the pus may be; pus, if present, must be evacuated before recovery can take place."

I may add, in answer to an inquiry, that Dr. Mann reports one hundred consecutive laparotomies without a death, and in his last two hundred and thirty-six cases he has only had nine deaths, four being due to malignant disease, two to hemorrhage, and three to obstruction of the bowels.

Case of Septic Peritonitis — Operation — Recovery.—The following case is reported by Dr. Zeba H. Evans:[1] Mrs. B——, aged thirty-four, miscarried at three months. Ill one week before Dr. Evans was called; he found patient suffering from puerperal septicæmia; temperature was subnormal and pulse 157. Respirations 34. Marked tympanites and profound collapse. He pronounced her in articulo mortis, which opinion was concurred in by other physicians who were called in consultation, and an unfavorable prognosis was given; but, at the request of friends, it was decided to operate, if the patient could be rallied. Stimulants and milk were administered during the night per rectum, and on the following morning, the patient having rallied, laparotomy was performed. One quart of serum was evacuated. Intestines were not allowed to escape. Free irrigation with plain water till the water escaped colorless. Rubber drainage was employed and the wound closed. Milk was given freely per os during the night. Case did well till the third day, when Dr. Evans was hurriedly called and found the patient with a pulse of 158, temperature 105° F., respiration 33, and patient delirious and picking at the bed clothes. Wound was at once opened and a pint of pus found. Free irrigation with plain warm water. Intestinal adhesions were broken up with the hand. The patient made a complete recovery in five weeks.

While the percentage of recoveries after operations for general septic peritonitis has not been large, still the fact remains that in these desperate cases many recoveries have taken place, and if a case like that given above can be saved, the chance is worth taking in any case, for the operation does not add to the patient's danger. If, unfortunately, we are not called till this complication is added to the previous grave condition, the indications for surgical aid are the more imperative.

Irrigation of Abdominal Cavity.—As to the irrigation of the abdominal cavity, the practice inclines toward the use of plain water or so-called normal salt solution, six-tenths per cent. My own experience and observation lead me to believe that many of the complications following laparotomy can be traced directly to the use of chemical solutions during the operation, either for irrigation, for disinfecting the hands of the operator, his instruments, or sponges. In a case where the abscess is circumscribed, it is bad practice to irrigate, owing to the danger of infecting the general cavity. In all aseptic cases irrigation should be avoided. When irrigation is necessary, while the normal salt solution is best, still in some cases, I believe, this may be followed by a second douche containing a small quantity of hydrogen dioxide. I have used it for several years in all kinds of surgical work, and once in the general abdominal cavity. In a case already alluded to (the patient dying shortly after the operation, no deduction can be drawn from it), and where pus was present, have found it in proper solution more efficient and less irritating than anything else. In some of the New York hospitals, it has been used for irrigating the pleural cavity in empyema, and it has proved satisfactory. I have been unable to find any record of a case where this compound has been used for irrigating the general cavity. In the letters already referred to, Dr. Senn says: "Have used the hydrogen dioxide in cases of limited peritonitis, and should not hesitate to use it in the diffused form."

Dr. Mann says: "And I have never used hydrogen dioxide in the general cavity, but have applied it to the cut ends of tubes, holes in intestines and bladder, etc., with good results."

Dr. Clement Cleveland says: "I have never used the dioxide in the peritoneal cavity. I have used it pure in the uterine cavity, in puerperal septicæmia, with excellent results."

Dr. Robert T. Morris writes: "In localized septic peritonitis, where I have occasion to expose directly the infected locality with retractors, I pour in the H_2O_2 in full strength and without any warming whatever. After allowing it to remain for a minute or two I sponge out

[1] Annals of Gynecology, September 9, 1891, vol. iv., No. 12.

and repeat, leaving the second lot for five minutes, sometimes not removing it at all, but putting my gauze wick down into it and allowing it to be sucked up at leisure by the drainage-wick. I have used it twice only in general septic peritonitis. One of the cases was an appendicitis (perforated), with the patient moribund at the time of application of the H_2O_2, I poured in a very large quantity, enough to bathe all of the abdominal organs; a very little hot water was poured into the peroxide just at the moment of using it, 'to take the chill off.' The peroxide was then siphoned out and the patient was made very much easier by the treatment, although he finally died. The other patient died too. The case was one of general septic peritonitis that had gone on to suppuration after removal of a gangrenous ovarian cyst. The post-mortem examination showed that the H_2O_2 had cleaned the cavity beautifully, and, although my patient died, I nevertheless obtained the impression that one has after such observations, that the H_2O_2 was very useful, and evidently quite harmless in itself. There are lots of cheap peroxides on the market that contain acids, and such would be harmful."

Anastomosis or Enterectomy.—It will often happen, in the course of an operation for obstruction, that we will be obliged to do an anastomosis or enterectomy. At the present time the tendency is to do away with the rings and decalcified bone-plates, etc.

Dr. Abbe[1] says: "Objection to plates in making anastomosis is that the opening is much too small and soon contracts." I believe the future utility of lateral anastomosis lies in making the opening four inches in length in sides of adjacent bowels; this is best done by simple suture."

Dr. W. H. Carmalt,[2] Professor of Surgery, Yale University, reports a case of intestinal obstruction due to cancer of the cæcum, in which he excised (eight inches) and did an end to end union by simple suture (two rows). First two days, patient's temperature ranged between 99° F. and 100.2° F.; pulse, 100 to 110. Third day, temperature, 99.6° F.; pulse, 80. Fourth day, temperature and pulse normal; bowels moved. Sixth day, two stitches were found in the fæces; on eighth day stitches in the abdominal wound were removed and a drop or two of pus being found around it, hydrogen dioxide was used and further trouble avoided. Twelfth day, another stitch was found in fæces, making three in all. Twenty sixth day, the patient was discharged cured.

Dr. Robert F. Weir,[3] of the New York Hospital, reports a case of intestinal anastomosis without rings, between ileum and sigmoid flexure, for intestinal obstruction (neoplasm) in the transverse colon; patient's bowels moved on fifth day, recovery uneventful.

I would like here to call attention to Maunsell's method, which is fully described in the *American Journal of the Medical Sciences* for March, 1892. By this method, circular enterorrhaphy can with a little practice be easily done in ten or fifteen minutes. Since my attention has been called to this method, I have had no opportunity of doing it except on the cadaver, but I have been much impressed with the ease and rapidity with which this operation can be done.

Dr. Hartley, of the New York Hospital, has kindly furnished me with the notes of the following unreported case, in which this method was used. "M. O——, aged twenty-eight. Carcinoma of the sigmoid flexure and double invagination of sigmoid. Presentation of tumor at anal orifice. Intestinal obstruction complete for one week before operation. Laparotomy, reduction of second invagination, and resection of intestines four inches, according to Maunsell's method. Passage of fæces one week after operation. Union by first intention. Temperature never above 100° F. Pulse, 98. Two months have elapsed since operation. Patient is well and has daily movements."

[1] MEDICAL RECORD, April, 1892, article on Intestinal Anastomosis and Suturing. [2] International Clinics, vol. iii., p. 113
[3] MEDICAL RECORD, April 9, 1892, p. 399.

Conclusion.—And now, in conclusion, a few years ago we had the diseases known as typhlitis, perityphlitis, paratyphlitis, typhilo enteritis, and on being called to a case we waited first to distinguish between the supposed different diseases, then between these and peritonitis, then for the abscess to assume large proportions and make its way to the surface, when it was opened. This was known as the late operation. Occasionally, someone would propose what was known as the early operation. He was generally pointed out as an unsafe man, an enthusiast. At that time the results were much the same, whether the patient was treated medically or surgically. Death ended most cases. But having profited by experience, and largely by that of McBurney, all these so-called different diseases are now grouped under the comprehensive name of appendicitis, the indications for treatment being the same in all. Thus the diagnosis has been simplified, and the time is rapidly coming when the knowledge that a localized peritonitis exists in the region of the appendix, will be sufficient to make us feel it our duty to perform the timely operation which is beginning to produce such good results.

Have we not proved that the responsibility for the frequent failure of surgery in intestinal obstructions rests largely with the general practitioner, through whose hands most of these cases pass on their way to us? May we not do away with much of the doubt and fear which have caused him to hesitate, by grouping those cases in which the symptoms and indications for treatment are the same as has been done in cases of appendicitis? When the general practitioner recognizes that it is only necessary to determine that internal strangulation exists, or that peritonitis is present, before calling in the surgeon, then instead of waiting hours and days, holding frequent consultations in the often vain effort to differentiate the causes of the obstruction, and while so doing using energetically the long rectal tube, cathartics, and repeated enemata, it may not be too much to hope that the timely operation for acute intestinal obstruction will become the rule rather than the exception.

And finally, we may say in the words McBurney has used in another connection, that "if we would accomplish the most by our discussion on this subject, then the surgeon and the physician must join hands, the physician accepting the fact that the surgeon does not always wish to operate, and the surgeon gladly stepping aside when he sees that success can be attained by his colleague's gentler methods."

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55 WEST THIRTY-SIXTH STREET.

London Hospitals.—There are nineteen general hospitals in London. Eleven of them have medical schools attached, and three, St. Bartholomew's, St. Thomas's, and Guy's, are endowed. The first of these is the wealthiest and most ancient, having been founded in 1122. Its net revenue in 1889 was $350,000. It owns houses in London and has also about 13,000 acres of land in various counties. St. Thomas's was founded in 1207, and has a revenue of about $220,000. Guy's has a revenue of about $130,000. The London Hospital in Whitechapel Road, with accommodations for 776 patients, is the largest in the metropolis. It treats annually also about one hundred thousand out-patients beside trivial cases not registered. The total number of beds in the general and special hospitals in London is 8,500, of which 6,500 are in constant use. The poor-law infirmaries and the sick wards of the workhouses furnish 14,000 beds, and the Metropolitan Asylum Board has 3,500 for infectious cases, the average number in use being less than 1,000.—*The Sun.*

IMPRESSIONS OF SOME OF THE NEWER DRUGS IN DERMATOLOGICAL PRACTICE.[1]

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THERE is no doubt that many of the novelties of this age are but renovated antiques, still the most firm believer in the adage that there is nothing new under the sun, will scarcely claim that the "new" remedies of the last few years—many of them purely the result of synthesis of logical thought as well as of chemical manipulations—were ever made by mortal man before, or ever used to cure his ills. Never before in the whole history of medicine have remedies been multiplied with such profusion. Before we have had time to familiarize ourselves with the name of the preparation, much less with its supposed virtues, it has, in many instances, been buried in an avalanche of similar remedies for the same purpose—but better—and not always, as one would suppose, introduced by a rival manufacturing firm. Much disappointment is often caused to those who, desiring to use the best, and conscious of the inadequacy of the old, turn to a new remedy which has been lauded by its discoverer, widely advertised by its manufacturer, and whose wonderful effects have been loudly proclaimed by subsidized or deluded journals.

The object of the present communication is to give my impressions of some of the newer remedies for external use, especially in skin diseases, which are not so new but that they have stood the test of time, and to indicate those which the writer has found to possess at least sufficient good qualities to secure for them a place in the list of valuable therapeutic agents.

Naphthol may still be classed among the newer remedies which have not gone to the wall, and while one of the most powerful and safest antiseptics of the phenol series it has not superseded carbolic acid in surgery, as it was at one time thought it might, and still remains a very valuable agent in the treatment of many forms of cutaneous disease.

Five years ago, I believe this very month, I had the privilege of addressing this Society on the subject of Naphthol in Dermatology,[2] and since that time I have continued to employ it in many of the skin affections in which I had till then noted its good effects, and have extended its use to some other conditions. Thus in the parasitic diseases, notably scabies, its action is uniformly favorable, and is increased when combined with sulphur. In pruritic affections, and in pruritus without lesions, it often cures the itching when other remedies have failed. In institution practice I place reliance on an antipruritic oil containing ten per cent. of naphthol. Occasional failures occur, as with any other itch-allaying remedy.

In diseases of the scalp, pityriasis, seborrhœa, seborrhœal eczema, impetiginous eczema, pediculosis, psoriasis, alopecia, and alopecia areata, I may say naphthol has given me as general satisfaction as any other single remedy. I now, more than formerly, combine the bichloride of mercury with it in several of these conditions, and with increased effect. If alopecia is due to any of these diseases, then naphthol tends to check the loss of hair by making the scalp healthy. The stimulating effect upon the healthy scalp has, it seems to me, prevented further loss of hair in many cases, and in some instances has undoubtedly brought about an increased growth. I believe, too, it hastens the natural return of the hair in syphilitic alopecia, as well as that following erysipelas, typhoid, and other debilitating forms of sickness. In women especially, has renewed growth of hair been at times very prompt and satisfactory in the ordinary forms of alopecia. In alopecia areata I have had several recoveries after a course of treatment both surprising to me and gratifying to the patient, by reason of its brevity.

[1] Read before the Manhattan Medical and Surgical Society, May, 1892.

[2] MEDICAL RECORD, May 21, 1887.

In such obstinate diseases as ichthyosis and prurigo of Hebra the results have been very satisfactory; while in milder affections, such as acne, chromophytosis, ringworm, sycosis, etc., naphthol has its use.

A good prescription is:

℞. Naphthol beta ..... gr. xv.
Sulph. prec ..... ʒ j to ʒ ij.
Lanoline ..... ʒ iij.
Cosmoline ..... ad ʒ j.
M.

For scabies the proportion of naphthol can be increased to ten per cent.

The following is the prescription which I have mostly used for the scalp:

℞. Naphthol beta ..... ʒ j. to ʒ ij.
Ol. ricini ..... ʒ ss.
Ol. amygdal. amar ..... ♏ j
Ol. aurantii flor ..... ♏ iv.
Spt. vini. rect ..... ʒ ijss.
M. To be applied to scalp once daily.

In the full strength I have once seen an eczema produced in a scalp the seat of pityriasis.

A practical point in regard to the way ointments should be made. I often see ointments dispensed with the naphthol crystals simply suspended in the base, and this may account for many failures put down to the discredit of the drug. Now, while but slightly soluble in water, it is freely so in alcohol, ether, chloroform, benzole, etc., and it should be ordered to be first dissolved in one of these before mixing with the base, or the druggist will probably neglect it. Perhaps as good a plan as any is that suggested by Hardy, of dissolving in ether, then evaporating the ether with heat before adding the fatty base. I have made extensive use of naphthol soap (two and a half per cent.), with or without sulphur, in parasitic diseases, acne, dry scaly conditions, pityriasis rosea, and pruritus, with often decided benefit. Iodo-naphthol, betol, benzoate of naphthol, and camphorated naphthol, are recently introduced modifications which have not yet come much into use, but the last mentioned compound has already some reputation as an interstitial injection in tuberculous adenitis.

Oxyiodide of Bismuth.—This is a drug which has come into use in certain quarters without the aid of literature. At least I have seen scarcely anything written upon the subject. I think it must be at least five years since my attention was directed to what was then rather a new preparation for wound treatment. It occurs as an insoluble powder of a bright coppery-red color and is without odor. It can be prepared by fusing iodine with bismuth, forming bismuth iodide, and boiling in water, when the subiodide precipitates. Another mode of preparation for small quantities which has been given is by the following formula:

℞. Bismuth subnit ..... ʒ ijss. gr. xxiv.
Acid. nitric ..... ♏ iij.
Aq bul ..... ʒ xij.
M. Dissolve with heat in porcelain capsule, add water slowly, and add

℞. Potass. iod ..... ʒ ix. gr. iij.
Aq. bul ..... ʒ xxviij
M. Add to part first, agitating after each addition, filter, and wash precipitate with boiling water.

So favorable was my impression of this preparation from the first, for the treatment of ulcerative lesions, that I introduced it in three public institutions where up to that time it had not been known, and in spite of its expense it has continued to be much employed and has grown in favor. Although it may be used in the form of an ointment in about ten per cent. strength, my chief experience has been with it as a powder dressing, sprinkled lightly over an ulcer, excoriation, sloughing wound, ulcerating venereal sore, or any other raw surface, it forms a glazed-like covering of metallic lustre which is protective at the same time that it exerts an antiseptic, a some-

what anæsthetic, and a decidedly stimulating and cicatrizing influence, due mainly to the facility with which it gives up its iodine. A thin coating of the powder often appears to produce as good an effect as a larger quantity, and in indolent ulcers, after a liberal use of the powder has stimulated to healthy granulation, the thinner the coat the better. I know of no better powder for the treatment of ulcerating chancre, and it has given me excellent results in balanitis, herpes progenitalis, moist papules about the genitals, condylomata, etc. In strict dermatological cases its action has seemed to me to be rather limited, but as a dressing for moist and ulcerating lesions it appears not inferior to newer and more expensive preparations.

Ichthyol has had so much written about its value that I will refer to it only with a word. I have no hesitancy in stating my belief that in this preparation we have the best known application for erysipelas. I also believe it to be valuable in many cutaneous affections, not only as a reducing agent, but also as an antiseptic. In lichen, acne variioliformis, impetigo, eczema, too much has been claimed for it by over-enthusiastic observers, but no doubt can longer remain that ichthyol is to have something more than the popularity of a day. I gave my views on ichthyol in erysipelas in the *American Journal of the Medical Sciences*, July, 1891, and I can only add that in about a dozen cases treated since then, ichthyol has given uniformly good results.

Resorcin is another of the many new remedies which has weathered the storm. Articles unfavorable to this as well as ichthyol deterred me, in the early days of their introduction, from giving them the extended trial I otherwise would, but more recently the value of resorcin in epi helioma, sycosis, various forms of eczema, intertrigo, ringworm, acne, rosacea, pityriasis rosea, and various other conditions, has been so manifest that for several years I have been employing it more and more. In several cases of pityriasis rosea cure was effected in a much shorter time than is usually required. It furnishes one of the best known means of cure in seborrhœal eczema, and seborrhœa in its several forms; and is of value in the parasitic diseases, especially tricophytosis and sycosis. In strong application it acts as a caustic, and may be employed as such in the treatment of epithelioma. I have had no successes to report. In pruritus the effect of resorcin is often very marked, and the relief afforded lasts for a number of hours. Unna includes it in his reducing agents. Ravogli has reported a case of dermatitis from its use. Care should be taken that the crystals are dissolved before being rubbed up with the ointment base.

Hydrogen Dioxide has of late attracted considerable attention as a microbe destroyer and disinfectant. For a long time it was sold more particularly as a bleaching agent, and one of its first uses in skin practice was on account of its power to remove pigmentary stains, etc. I have employed it for a number of years in removing from the skin and nails such discolorations as were produced by chrysarobin, pyrogallol, permanganate of potash, sulphur, and more recently the aniline dyes which have begun to play a *rôle* in dermatological practice. One day, at Richfield Springs, I was called to see a gentleman who had "turned black" after a sulphur bath, and by no amount of scrubbing had he succeeded in making himself presentable. He had been using a metallic ointment on the face and hands, and the sulphureted hydrogen of the bath had done the rest. A little peroxide of hydrogen soon removed all discoloration and permitted the young man to rejoin the ladies. In another instance, an actress who had entered the bath without first removing the cosmetic from her face, was forced to call upon me before she could leave her room. A solution of the peroxide soon removed the stains. Wherever there is pus to be destroyed, and especially subcutaneous collections of purulent fluid, we have in this preparation probably the best means of accomplishing our purpose. I have found peroxide of great service in paronychia and other affections of the nails. Even in a case of psoriasis of the nail-bed this remedy did more good than any previously tried, softening the thickened epithelium and causing the psoriatic spots to disappear. As a microbe destroyer it is of decided benefit wherever the seat of the disease can be reached. Unfortunately, in such affections as sycoses, tricophytoses capitis, favus, etc., the microbe has its seat so deeply in the tissues that before the fluid can penetrate to it, the more external tissues are swelled up by the fluid and offer a decided obstacle to further benefit. I have employed the fifteen-volume solution as a local application in comedones with some benefit. The black head is bleached in a measure, and there appears to be, aside from this effect, a decided diminution in the inflammatory condition, and where pus and secretions are present they are oxidized and destroyed. If there is much inflammation of the parts or open lesions are present, the strength of the application may have to be decreased by diluting with water. For the application of the peroxide in ointment, it is better to use the ozonic ether instead of the watery solution, as Richardson has pointed out, because of its mixing more readily with fatty substances. Unna has given the following formula for acne:

℞. Lanoline ..... 10.
Vaseline ..... 20.
Hydrogen peroxide ..... 20–40.

I have recently used an ointment made by adding one part of the ten per cent. ethereal solution now on the market to five parts of vaseline. Such an ointment makes an excellent disinfectant to apply to the surface in scarlet fever. On ulcerations the action of the usually employed "fifteen volume" solution—*i.e.*, such a solution of dioxide in water as will give off when decomposed fifteen times its own volume of oxygen—has seemed to me very beneficial, not only because it destroys by oxidation the pus present, but because it appears to have a direct stimulating effect upon the tissues themselves, an effect which can be increased up to the point of cautery by increasing the strength of the solution. In boils, abscesses, superficial and deep suppurating ulcers, moist, secreting syphilitic patches, ulcers in the throat, and in various other conditions, the peroxide has given excellent results.

Pyrozone is the name given to a fifty per cent solution of hydrogen dioxide in ether (the fifteen-volume solution containing about four per cent.). This, when applied to the healthy cutaneous surface, produces an immediate whitening of the skin which remains for a considerable time, and is attended at first by a slight tingling and occasional sharp twinge of pain, and usually some subsequent itching. If the application is repeated on the same or following day, vesiculation will take place, and this sometimes happens after the first application. I have made use of this new preparation in several instances of chloasma, flat pigmented nævi, and flat warts, with gratifying results. In one case where it was brushed over the surface of a congenital pigment mark the size of a silver dollar, on a lady's neck, the pain was much complained of for fifteen minutes, and from the amount of surrounding erythematous redness it could be seen that a pronounced effect was produced, though blistering did not occur.

Aristol.—Since I made a report on the use of aristol in skin diseases at the meeting of the American Dermatological Association, in September, 1890, I have continued to employ it in a variety of affections, and find it of decided benefit in all cases where a granulation stimulant and cicatrizing agent is required. Its value probably depends upon its richness in iodine, containing as it does something like forty-five per cent. It has the advantage over the newer dermatol in being soluble in oils, ether, and alcohol, though only slightly so in the latter.

At the out-door department of Bellevue I have used aristol extensively in the treatment of chancroid, and,

contrary to the experience of others, and the statements frequently made that it is of no great value in this condition, I must record my experience in favor of it. In lupus, psoriasis, and epithelioma, the action, while it cannot be said to be curative, is highly beneficial. It will remove the lesions of psoriasis, but it does not do the work as quickly and thoroughly as does chrysarobin. I do not believe that a case of epithelioma has been or will be cured by aristol. It may cause cicatrization of an ulcerating cancer, but the disease will be still present. At the last meeting of the American Medical Association, in discussing aristol, Dr. Keller said: "In epithelioma I am convinced its action is admirably curative, often seeming to cure it rapidly and completely." Now, I am afraid such statements are misleading. The drug does just what Dr. Keller says, it seems to cure. If he or anyone else can state instances of permanent cure of epithelioma, I should be much pleased to know it. I have used aristol extensively in epithelioma, but only in the hope of causing cicatrization in cases gone beyond the operative period, and to cause healing of the wound after operation in the other class of cases. I have only words of praise to use for the drug in this sense, but as a cure for cancer I am unfamiliar with it. The same may be said of lupus. Ringworm, eczema marginatum, ulcers, erysipelas, have all appeared to be influenced favorably by aristol dressings. Neisser, however, has found that aristol possesses no antibacterial power on cultures. As an application to mucous membranes, as in the nose, it has given good results, and several cases of syphilis of the nose and ozæna have been much benefited. It is my usual dressing for most of the open lesions of relapsing periods of syphilis. As it is insoluble, wherever a penetrating action is desired, instead of a simple superficial coating of powder, an oily or ethereal solution or ointment should be used.

In closing my previous report on aristol I say: "In dermatological cases it has a certain though limited application." This view I have not yet changed.

Europhen.—This is another iodine product introduced by the same manufacturers as a substitute for iodoform. It contains much less iodine than aristol, only about twenty-seven per cent. Like aristol it is insoluble in water or glycerine, but is dissolved in alcohol, ether, chloroform, and fixed oils, and so like it can be used in collodion, or ointment, preferably with lanoline traumaticine, and is generally employed in from one or two to five per cent. strength. Three per cent. is usually strong enough. It has to me the old familiar smell of iodoform, but much less pronounced. It is not so disagreeable to the nostril as iodoform, but if it is chosen to replace the latter solely on account of the smell, I fear disappointment will at tend its employment. The advantages over iodoform appear to be that it is not toxic. It does not tend to harden, pack, or mass into lumps as iodoform so often does. A much smaller quantity suffices to cover a given diseased surface, as it is five times as light as iodoform. It adheres, in other words, more closely to denuded surfaces than does iodoform, but this is true of dermatol, aristol, and subiodide of bismuth. The odor is said to resemble saffron. Its action in chancroid surpasses that of aristol.

A faulty translation in the *Sanitarian*, October, 1891, makes Eichhoff state that it is efficacious in psoriasis and favus; this has been copied into many other journals, and the error has been propagated. Eichhoff distinctly states that these diseases are not benefited. I have not thought it worth while to try it in psoriasis, but a short trial in favus convinced me that it was not of much value. The literature would indicate that up to now europhen had found its most important field of usefulness in nose and throat work.

Like aristol, its use in cutaneous diseases must remain restricted. In some comparative clinical experiments between dermatol and europhen on the one hand, and between them and other plans of treatment, I found europhen inferior to dermatol, both inferior to aristol, but all less valuable than older remedies in a variety of affections, especially impetigo, impetigo contagiosa, chancroidal and other ulcerations.

Dermatol is the name given to one of the most recently introduced substitutes for iodoform. It occurs as a fine yellow, non hygroscopic powder, odorless, non-poisonous, and non irritating. It is formed by a combination of gallic acid and bismuth, and possesses marked cicatrizing and antiseptic properties, while its non-soluble nature in all ordinary media renders it free from toxicity.

As an antiseptic the gallate of bismuth has not been found equal to iodoform, but its lack of odor is a point in its favor. Applied to the healthy skin, in powder or solution, no effect is produced, it causes no irritation, and when applied to ulcerating surfaces or open wounds it produces no pain. Experiments have shown that it prevents the growth and development of micro-organisms. Clinically, it is found to be a valuable cicatrizing agent, and wounds heal up favorably under its use. So far as having any particularly prominent or pronounced action upon the skin or upon skin diseases is concerned, dermatol is a misnomer. I have used it more as a dressing for wounds and after operations, instead of iodoform, more than I have in skin diseases, as already mentioned; in the few skin affections in which it has been tried it seems inferior to aristol, though an improvement on europhen. A burn of the foot and several burns of the second degree in children, healed nicely under a two per cent. ointment.

In several cases of varicella I covered the individual lesions on the face with dermatol in plaster, with the view of preventing pitting. No pitting took place. I have used it in collodion as a wound dressing and in slight lesions of the skin with good effect, in ointment with lanoline and vaseline, and at the hospital in vaseline alone in ten per cent. strength. It can be mixed with starch or talcum, or both, for dusting-powder purposes in intertrigo, eczema, etc., and for hyperidrosis pedum. In ulcers it is inferior to the other powders so far as stimulation of a flabby or indolent base is concerned. It can be combined with zinc oxide and starch to make a paste.

Pyoktanin I have not found of much value in skin cases. In six cases of inoperable cancer, in which I have tried it both as a local dressing and in interstitial injection, I have found it to give much relief to the patient, and in some instances has very markedly decreased the size of the growth. Internally, from three to five grains of methyl-violet daily have seemed to produce little effect, but incidentally I found it very beneficial in cystitis.

Locally, in gonorrhœa, it seemed to do some good, but internally in one case its action was nil. Thirty-eight cases were treated with injections, gr. ss. to ℥ j.; 12 only remained under observation, 8 were cured, 3 improved, and 1 not improved. The average time of treatment for the 8 cases was four and five-eighths days.

Cases of poisoning from methyl-blue have not been reported, but at the last meeting of the Dermatological Society, Dr. R. W. Taylor, who had ordered three grain capsules for a case of cystitis, reported that the man had taken by mistake two capsules at a dose, and as a result presented himself with a severe dermatitis of the face and hands.

Fuchsine, employed in one per cent. solution in alcohol or collodion, has had some reputation in ulcers, lupus, Paget's disease, epithelioma, eczema marginatum, moist eczema of the hands, and kindred diseases. I have seen a number of cases so treated, but have failed to note any marked beneficial effect. It is the hydrochlorate of rosaniline, and is supposed to combine with micro-organisms.

Creoline, in strength of two per cent. or less in solution or ointment, gives good results in some forms of eczema. It appears to be a powerful antiseptic, but its odor is unfavorable to its use in private.

Thilanin, prepared by the action of sulphur on lanoline, and containing three per cent. of the former, has recently been introduced, and the first has just arrived in this city. It should, from theoretical grounds, prove an excellent remedy for many forms of eruption, since sulphur is one of the most valuable remedies we possess in combating skin diseases. Saalfeld has found that results can be obtained with it which an ordinary three per cent. sulphur ointment will not produce without, at the same time, occasioning an irritation wholly undesirable.

Deodorized Iodoform.—In the *Journal of Cutaneous and Venereal Diseases* for 1886, I gave the result of my attempts to find a way of making iodoform inodorous, and reviewed the suggestions of the various essential oils, tonka bean, or cumarin (which, by the way, has till recently been one of the best in strength of four per cent.), balsam of Peru, coffee (objectionable because fifty per cent. is required), quinine, charcoal, etc., and my conclusion was that none of the methods was satisfactory. Almost any of the ethereal oils will disguise the odor for a time, but so soon as they evaporate, which is not long, the mask is removed. Up to that time I had found non-ethereal oil of sassafras (two drops to the drachm) the most satisfactory. The oil of Canada snake-root (ol. asari canadensis) in the same strength is also efficacious while in bulk, but as soon as rubbed upon the surface the original odor appears. Ethereal oil of coriander, four to eight drops to the drachm, disguises the odor for several days, even when applied to the body. Another suggestion for an ointment is to add one part of creoline to every two parts of iodoform. This surely prevents the smell of iodoform being noticed, but at a sacrifice which will make many nostrils revolt.

Mr. Tsheppe, of the firm of Tsheppe & Schur, has called my attention to heliotropin as an efficient means of rendering iodoform inodorous. This is a synthetical preparation made by Schimmel & Co., of Leipzig, and is rather expensive ($7 per ounce), but only two per cent. is required to give an odor to iodoform which will last as long as the iodoform.

Now, having these means of, at least for a time, wholly disguising iodoform, and probably in one way of doing so permanently, is it so essential to find a substitute, since the odor is the chief objection. Iodoform has not been supplanted by any of the newer would-be-substitutes, and probably will not be wholly, at least for a long time, as it has many useful properties, and surgeons are not going to give it up until quite sure of some better, if not cheaper, substitute.

Stearates have recently been introduced to take the place of oleates. It is probable that the stearate of zinc and of mercury will find a permanent place in the armamentarium of the skin man. The zinc makes an adhesive powder, and in some eczemas appears to have a healing action.

Permanganate of Potassium has proven itself to be an excellent detergent wash in strength of gr. j. to ʒ j. in hyperidrosis pedum. I have used it to some extent in eczemas, ulcers, ivy poison, pustular eruptions of septic origin, etc., and am convinced that it has a value not yet appreciated. It has been used in Russia in burns and frost-bites of first and second degree; I have used it in one or two cases of burn, but without much to be said in its favor.

New Bases are glyco-gelatine, bassorin, and plasment. The first are simply mixtures of glycerine and gelatine in varying proportions, to make a soft or hard mass when combined with zinc oxide and other remedies. They make a protective dressing when painted over diseased areas. Bassorin base was introduced by Mr. Lascar, the apothecary at Demilt Dispensary, and brought to the notice of the profession by Dr. Elliott. Bassorin gum, water, glycerine, and dextrine are so mixed as to make a jelly-like mass with which various medicinal agents can be incorporated. I have found it to fill the indications in a number of cases.

Plasment is a very similar base, made from some form of moss. It was introduced to the New York dermatologists by Dr. Fox, and is made by the firm of Daggett & Ramsdell. I have used it with a variety of drugs, including europhen, dermatol, and aristol. My impression is that unless made freshly or incorporated with an antiseptic, it does not keep well or give satisfaction to the patient. I would advise against dispensing it in metallic tubes when minerals are used, especially iodine preparation, bismuth, and lead.

A comparison of several powders, taken from experience of others as well as my own, will be found in the following table:

	Aristol.	Bismuth Oxyiodide.	Dermatol.	Europhen.	Iodoform.
Odor	.....	.....	.....	Saffron or somewhat like iodoform; faint.	Makes substitute desirable.
Solubility	Soluble in oils, ether, chloroform, etc.	Insoluble	Insoluble	Like aristol	Soluble.
Toxidity	No absorption effects	.....	Not toxic (headache produced). Cases reported.	Not toxic in internal dose of gram. 1.5 daily. Poisonous to animals.	Occasional poisonous effects.
Local irritation	None	None	None (dermatitis reported).	.....	Often causes dermatitis.
Price	35 cents per drachm	10 cents per drachm.	15 cents per drachm	35 cents per drachm	10 cents per drachm.
Internal use	In rheumatism and neuralgia.	Yellow subiodide, gr. v. to xx.	As substitute for subnitrate, gr. xxx.	Subcutaneously in syphilis.	Internal remedy.
Antibacterial qualities	Cultures not retarded. Not marked.	Antiseptic	Slight antiseptic; less than iodoform; no effect on dried cultures.	Arrests development of micro-organisms; does not destroy them.	Antibacterial; no effect on dry cultures.
Analgetic effect	.....	.....	.....	Decided.	
Antituberculous action	.....	.....	.....	Same as iodoform	Well established.
Iodine present	Rich; forty-five per cent.	Rich	None	Twenty-eight per cent.	
Iodine present given up	.....	Freely, though stable.	.....	Less than iodoform; urine shows none.	Gives up iodine when injected.
Stimulant effect	Favors granulation	Marked	Not in torpid ulcers.		
Epithelial producing and cicatrizing effect.	Most marked	Marked	Favors epithelial growth; marked; desiccating.	Marked.	
Physical properties	.....	.....	Not hygroscopic but absorbent.	Must be protected from light and moisture.	Hygroscopic cakes. Waste.
In chancre	Inferior to iodoform	Excellent	Useful	Better than aristol or iodoform.	Good.
In chancroid	Good	Good	Not good	Better than iodoform.	
Balanitis	Good	Good.			
Psoriasis	Good; inferior to chrysarobin	No effect	No effect	No effect, or only slight	No effect.
Parasitic diseases	Tricophytosis, chromophytosis. Good.	Slight	.....	Good	Slight.
Eczema	Too drying as powder in some cases; in moist excellent.	.....	Good dusting powder	Where stimulation is needed.	Little use.
Ulcers	Excellent in indolent and malignant secondary; only affects surface unless dissolved.	Very good, especially in indolent.	Not sufficiently stimulating for indolent; decreases moisture. In phagedena.	Good; equal to aristol in ulcerating lupus, epithelioma, etc.	Good. In phagedena.
Burns	Two per cent. ointment	.....	Two per cent. ointment	Hæmostatic	Good.
Incompatible	With hydroxides, carbonates, metallic oxides, starch, corrosive sublimate.	.....	Mixes with starch	.....	With corrosive sublimate.

696 Madison Avenue.

A CONTRIBUTION TO THE TECHNIQUE OF MASTOID OPERATIONS.

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DURING the past year I have, in nearly all my operations upon the mastoid process, made use of a simple contrivance which serves the purpose of indicating, in a trustworthy manner, the relations of the mastoid antrum to the visible field in which our operative procedures upon the bone must take place. This field, owing to the fact that we are not warranted in laying bare an unlimited area of skull surface, presents ordinarily to the observer no characteristics which may readily distinguish it from any other portion of the skull of equal extent. As a means of ascertaining with some degree of accuracy the locality in which the antrum is to be sought for, I have always considered the upper and posterior curved margin of the orifice of the bony external auditory canal as the landmark which I could follow with a sense of almost absolute security. Ordinarily, however, this landmark is not exposed to view. It is usually located by aid of a stiff silver probe, or a steel director, which is made to crowd the soft parts far enough forward to permit it to enter the osseous canal. The instrument is then withdrawn, and we proceed with our work upon the bone, endeavoring all the time to carry the locality of the recently demonstrated landmark in our mind. But this attempt to memorize the exact situation of a given spot soon proves unavailing, and we are obliged to resort to the use of the probe or director a second time. Thus, in the course of the operation, it may be found necessary to relocate the landmark half a dozen times. To obviate this difficulty, and to supply a trustworthy landmark which should be constantly visible during the progress of the operation, I devised the hook which is shown in the accompanying cut (Fig. 1). Originally it was not provided with the small, round, projecting knob, but I found that the oozing of blood in some cases was so constant and so copious as to conceal the greater part of the hook, and I therefore had the steel knob added as a means of showing conspicuously the exact location of the curving upper margin of the external auditory canal.

FIG. 1.—Mastoid Hook-guide. (Reduced one-half in size.)

FIG. 2.—Dissection of the Mastoid Process, showing the Relations of the Pneumatic Cells and Antrum to the External Auditory Canal. The upper ends of the bristles may be seen projecting into the cavity of the antrum. (From Nuhn's Atlas of Surgical Anatomy; slightly reduced in size.)

The curved sharp end of the hook is to be introduced from above into the orifice of the external auditory canal, between the soft parts and the upper margin of the bony orifice. The instrument is then to be kept firmly pressing against the surface of bone by the assistant who is administering the anæsthetic. The long axis of the instrument, when in its proper position, should correspond approximately with the long axis of the body of the patient. A glance at the accompanying anatomical cut (Fig. 2) will convey to the reader a better idea of the relations of the steel knob—the position of which at the orifice of the canal can easily be supplied by the imagination—to the mastoid antrum than can be afforded by any mere verbal description.

Finally, I may add the remark that in order to operate comfortably and with adequate thoroughness, a large external incision is desirable, and preferably one that is curved (horizontal above, curving gradually into vertical below). In very young children an incision of one inch and three-quarters may suffice, but in adults we shall require one of at least two inches and three-quarters, and sometimes, when the tissues are much infiltrated, one of even four inches in length. Another important aid is afforded by an extra broad retractor, either solid, as preferred by Blake, of Boston, or fenestrated, like the one shown in the accompanying cut (Fig. 3). By the aid of such a retractor the flap, composed of the auricle and immediately surrounding soft parts, can be drawn well forward, thus increasing to the fullest extent the area of exposed bone surface.

FIG. 3.—Large Fenestrated Retractor for Mastoid Operations. (Reduced one-half in size.)

CRIMINALS THE PRODUCT OF HEREDITARY DEGENERACY.

By SOPHIA McCLELLAND, M.D.,

NEW YORK.

THE universe is a system of matter by matter for matter. The nervous system is the expression of the spiritual self; the material form of the expression made visible. Every inquiry into the relations between physics and morals—the spiritual—comprises the influence of the moral on the physical, and the influence of the physical on the moral. Every mental state implies a corresponding physical state, and the nervous system is the physical condition of moral phenomena, and a variation in the one is associated with a variation in the other. The brain must be used and nourished like every other organ if its functions are to be fully developed. If this be neglected, or cultivated in a wrong direction—if the organs of the understanding, reason, and judgment are allowed to remain inactive, and the organs of feeling and imagination stimulated and favored, the whole brain is crippled, and one part nourished at the expense of the other.

Now, if we accept this hypothesis—a view now taken by the most advanced scientists as a recognized fact—on the ground of the relation of morals and ethics to the physical, can we not find in the past a starting-point from which nature has fashioned descending generations? Can we explain the cause of the fearful increase of crime of every description, intimately connected not only with the social conditions of the community, but with that of the country at large—the decay of faith—the besotted sensualism—the trampling upon the relations of husband and wife, parent and child, master and servant, ruler and subject—the impatience and restlessness under the just restraints of law—the looseness in government and laxity in discipline—the enormous increase in divorce suits—the swelling of

our criminal lists, so that our penal institutions are overcrowded—the suicides, and the worship of devils? Probably we shall find in the past, not so far back as the Deluge, a starting-point.

The early stimulation of character through the pioneer period has irritated the nervous system of the people of our country into impulses that have caused an abnormal activity and a serious disturbance of the general physiological balance, and that increased nervous nutrition demanded by the new life and its consequences has tended to physical deterioration from the type of the parent race. Furthermore, twenty-five years ago the circumstances of the times were favorable to the development of morbid sentiments—four years of incessant war with its battles and sieges, exciting violent emotions of various kinds, quickened nervous sensibilities, which became exaggerated, like an hypertrophied organ, from excessive development.

The people were a prey to wild passions, tossed from heights to depths, sudden as a thunder clap; they reasoned little but felt much. During this feverish storm of emotions and of impressions, cool, calm judgment appeared at a disadvantage, the bravest and best of the nation were swept away, while we are to-day suffering from the deplorable consequences in the deterioration of its breed.

We should not in matters intellectual or moral, any more than in matters agricultural, expect to reap where we have not sown, or to gather where we have not strewed. One of the most difficult lessons to impress on any mind is the power and extent of individual influence. If it makes no impression on a man to know that God will visit his iniquities upon him, he cannot blind himself to the fact that nature will.

Visit a prison or a mad-house and see Nature squaring her accounts with sin, carrying out her heavy sentences for violated laws. Science begins with the investigation of laws—it is perfected only in the determination of causes. In the light thrown by these laws on the development of the human organism, we discover that bad and unfitting conditions of existence are the cause of perverse and inharmonious development, and that an improvement in these conditions would effect a corresponding improvement in the individual. Revelations of scientific research have proved that there are conditions of the brain in individuals, guilty of sudden and unexpected outrages of the laws of morality, beyond their control, as well as the suicidal or homicidal mania, which can be surely traced to the mental state of the parents, not only as relating to their repugnance to the condition of maternity, but in their efforts to destroy the embryo.

Nerve structure is handed down from parent to offspring, giving each individual a personal capacity which, though capable of being modified by education and influence of environment, is depending on actual organization. It has been clearly demonstrated that nerve energy only exists within the boundaries of nerve structure, and that it varies in expression only when there is a variation in the nerve tissue; this applies to every form of nerve energy, whether it be a simple sensation or the exhibition of thought, reason, and will. I have noted the inheritance of individual peculiarities, and found that they were illustrative examples of the heredity of morbid conditions, imperfections, and anomalies in the intellectual and moral world, as the origin of the monstrosities which we see in the physical are to be attributed to hereditary organic influences. Hence criminals are such, either because they inherit a brain structure incapable of generating moral faculties, or through the influence of repressive environment the development of mind does not evolve sufficient moral strength to guide and control the lower propensities of man's nature. They cannot entirely overcome and negate that which lies in silence, and in strength, behind the organization, and which so imperiously directs action and thought.

Although the intelligence may be acute, and the reasoning faculties may be in a high state of development, yet with all this there is a moral deficiency and perversity of thoughts and desires, with violent passions, which are uncontrolled by the moral faculties, not because the perversities are greater than in other men, but because the moral force is less.

Cause and effect are as unvaried in the intellectual and moral as in the physical world; and through heredity the physical, intellectual, and moral forces of the ancestor largely determine the physical, intellectual, and moral forces of the offspring. Thus we find the number of really healthy, vigorous, and reasonably well-born and well-trained children who ever fall into a career of crime is exceedingly small. Even the accidental fall of such persons always admits of rescue. We have passed hours in the Court of General Sessions in this city (New York), and noted the criminals as they stood before the bar; fully eighty per cent. of these were evidences of arrested development—brains that had been pinched by poverty from father to son for a hundred years, or the offspring of inebriates, epileptics, or those whose pre natal conditions were such as to impress them with an unstable brain.

There are conditions in the nervous system which are neither disease nor crime, yet by adverse circumstances may lead to both, or a development through power of resistance and endurance favorable to recovery.

We see in childhood predispositions to special nervous affections which are not disease, but easily assume conditions favorable to this development through any disturbances of the health of the body from its normal state. Thus, for instance, we see in infancy convulsions, hysteria, nervous irritability, neuralgia, fainting spells, palpitations of the heart and vertigo, melancholia, and eccentricity—these are neither diseases nor crimes, yet by improper development may lead to both. The great factors are heredity and degeneration; but favorable or untoward influences may develop two different results from the same congenital structure, thus the same nature that reveals a perfect angel could become a splendid devil under different developing circumstances. The environment and formation of the earliest habits is the determination of the future man and woman, but perfection of function is the highest result of happy heredity.

There are physical peculiarities which are common to all the degenerated, the insane, the neurotic as well as the criminal. These deficiencies are sometimes in one part of the organism and sometimes in another, but are always associated with deficiencies in the tissues of the internal organs, produced from causes arising during embryonic life. These unfortunate individuals have inherited incapacities of various kinds, morbid cravings, strong passions, and feeble wills to resist temptations; many with defective education from lack of mental power and stability.

There are others whose moral control is so deficient, whose brain is so abnormal from inherited morbid conditions arising from various neurotic affections, that they can only with the greatest difficulty resist temptations from without, or morbid impulses from within. There is an impaired, defective, or diseased condition of the nervous tissue that inevitably results in crime, just as certain other conditions of the nervous tissue results in epilepsy and insanity. This should be defined as a degenerative psychosis of the epileptoid group. The physical peculiarities are easily recognized of the criminal type in a development that would naturally result from the constant use of their faculties in criminal ways. Some criminals possess keen intellects, but their mental qualities are peculiar, and are mainly developed in the line of cunning and scheming, although there are many degrees from the "queer" and "eccentric" individual to the lunatic who is wholly irresponsible.

During the last of the past and the present century there has been a change in the character of crime. A French scientist has observed this curious fact, that the prevailing types of crime have varied with every phase in the progress of civilization. Thus piracy and infanticide have steadily decreased; highway robbery, too, has de-

clined, while theft has considerably increased, as well as certain stealthy forms of murder which have successfully baffled the law. The criminal history of the last two decades seems to prove that criminals begin to master the difficulties of circumstances in a way which threatens to make discovery next to impossible. Poison, for instance, has made great progress in science, so that those who are skilled are able to cover all traces of their crime by taking the precaution to use more than one drug. Only a few months ago one of the experts consulted in the trial of Harris, the medical student accused of causing the death of his wife, quoted the opinion of several eminent specialists to this effect: "No chemical analysis can pretend to trace the vestiges of certain poisons as modified by the subsequent administration of other drugs."

Drs. Ferens and Delat have demonstrated that insanity is much more frequent among criminals than in other persons; that crime and insanity are closely connected; that a large percentage of criminals, before they reach the age of twenty five, give evidence of hereditary neurosis. The innate weakness and instability of their brain is shown by the number of criminals who become insane in jails, which is ten times higher than it is in the free population outside. In asylums we find many lunatics who resemble criminals, and in jails we find many criminals who resemble lunatics.

Huxley says that "theft and murder are the result of activity of special theft and murder cells in the gray pulp," while Benedict, one of the most famous physiologists and pathologists, in his work on "The Brains of Criminals," has arrived at the following conclusions: "The brains of criminals exhibit a deviation from the normal type, and criminals are to be viewed as an anthropological variety of their species, at least among cultured races. The constitutional criminal is a burdened individual, and has the same relation to crime as his next-of-blood kin, the epileptic, and his cousin the idiot, have to their encephalopathic conditions. The essential ground of abnormal action of the brain is abnormal brain structure." The appreciation of these facts is likely to create a veritable revelation in ethics, psychology, and jurisprudence.

The transmission of all kinds of psychological anomalies—whether of passions or crimes, or of hallucinations and insanity—is so frequent, and evidenced by such striking facts, that morbid psychological heredity is admitted by those who have no suspicion of a law which is far more general.

If we restrict ourselves to two sorts of cases, where disorders of the intellect correspond to changes in the tissues of nerve-centres, and those in which the brain presents no apparent degeneration, but the individual has voluntarily become hardened and dangerous—the criminal by profession—characterized by expressed physical signs resulting through heredity from innate physical conditions fashioned by imitation for generations.

The similarity of the features of this class of offenders may be explained by the similarity of their habits. Heredity is a biological law, which itself results from another law, that of the transfer, by generation, of the attributes of physical and mental life; and the laws of generation govern everything that lives—the plant as well as the animal. And there is not one part of the domain of life subject to the laws of heredity and another part exempt from them. This work is but an essay, and will only serve as a basis and plan for our exposition, for we are compelled to grope our way. This study would require a volume. For our purpose it will suffice here to show by some facts what the unconscious activity is, and in what degree it can explain the correlation of the physical and the moral.

First, it might be held that psychological heredity is the cause of physiological heredity. This proposition is evidently the one that is maintained by the idealists. It is worthy of remark that while spiritualistic philosophy has been much occupied with the future destiny of the soul, it has bestowed very little thought on its origin. It has inquired whither we are going, and but seldom whence we came. And yet these two problems are both equally mysterious.

The soul inherits from its parents certain determinate forms of sensitive, intellectual, and voluntary activity, and it contains these virtually. The soul thus constituted now sets about fashioning its body. Follow its labors from that moment which caused Harvey so much astonishment, when he "saw slender threads like those of a spider's web, stretch out from one corner to another of the matrix, and then saw this net-work forming a sac which held a white liquor in which appeared the punctum saliens. Follow this evolution, whose aspect changes sometimes from hour to hour, and whose instability affects the most essential no less than the most accessory portions, so that it might be said that the unseen workman is feeling his way, and that he completes his work only after many a mistake. Pursue your observations to the moment when embryonic life is at an end, and extra-uterine life begins, and then see how evolution still goes on until the being is fully constituted; and you must confess, perhaps unwillingly, that all this is wonderful work, which, in spite of errors, anomalies, and deviations, is not the effect of chance, and that it is not without intelligence, though without consciousness. Here the soul is the cause, the organism the effect, consequently, the conclusion is quite natural that the nature of the soul implies that of the body, and that the ground of physiological heredity is to be sought in psychological heredity."

Lombroso, the leader of the Italian school, thinks that every criminal is the product of a degenerate individual whose physical characteristics bear mark of the primitive savage, born in a wild condition, and fatally condemned by their organization—both materially and morally—to theft or murder. Are these remnants of an ancient, coarser, and more cruel age? or are they simply madmen? The skulls of a number of murderers and highwaymen present evident exaggerated characteristics of the savage, and would bear out this supposition. Either idea has been upheld by Lombroso, who, after having considered the criminal as a savage, has now come to consider him as a madman, in the moral sense of the word, without entirely abandoning his first opinion.

In England and in France there is a tendency to identify the criminal as morally insane, in other words, the criminal is a madman, though he seems to have a purpose in his crime. There are others again who class the criminal by birth among the professional types, as we have said before, just as men are born soldiers, artists, and poets. Whatever may be the action on the organism of a murderer of the kind of life which he leads, there is a great resemblance between all criminals, which bears no similarity to the habitual expression of young prisoners, which has been modified by the differences of their surroundings from those in which they had lived previously.

Civilization is a very complex condition, a moral atmosphere to which man has to become acclimated. There must be a correspondence between the moral man and his moral conditions, as between the physical man and his physical conditions. Whoever cannot adapt himself to new conditions of social life must die out—gradually, perhaps, yet surely.

There is always in every community a proportion of brains, which, being brought into action, will break down. This proportion doubtless diminishes as the community is elevated, and in a very few generations the result of culture may—perhaps will—be to develop a better stock, looking at the people as a whole; but at the outset of the educationary process, and in the generation first taught, the immediate result must be a considerable number of wreckings.

This general principle is applicable to all races, peoples, and classes, and it explains why the first effect of

trying to elevate the negroes has been to produce an apparent increase of insanity among them.

Functional nervous diseases and irritable nervous action, as well as abnormal conditions of the physical life, are found in a large percentage of cases in the descendants of those whose predecessors were addicted to drinking alcohol and its ingredients. Confirmed drunkenness of the parent was as potent as actual mental deficiency to predispose his children to the development of insanity. Alcohol first excited, then paralyzed in succession, every nervous centre in the body.

Epilepsy, insanity, chorea, hysteria, and asthma, in some families are found interchangeable with this habit. Statistics show these diseases to be largely incidental to the period of growth and development. Among two hundred and twenty-five cases, in over fifty-five per cent. these diseases made their first appearence before the age of twenty-five, and in over thirty per cent. they appeared before the age of ten.

Demme, by careful research and examination into the history of ten families of drinkers and ten families of temperate persons, elicited the following facts: The direct posterity of the ten families of drinkers included fifty-seven children. Of these twenty-five died in the first weeks and months of their life; six were idiots; in five children a striking backwardness of their longitudinal growth was observed; five were affected with epilepsy; five with inborn diseases. One boy was taken with chorea and became idiotic. Thus of the fifty-seven children of drinkers only ten, or 19.5 per cent., showed a normal constitution and development. The ten temperate families had sixty-one children, five only dying in the first weeks; four were affected with curable diseases of the nervous system, two only presented inborn defects. The remaining fifty—81.9 per cent.—were normal in their constitution and development.

From this series of investigations we derive the sad truth that among the children of drinkers the prevailing mortality is fearful; that the survivors represent a pitiful crowd, afflicted with unsoundness of mind, idiocy, epilepsy, and other disturbances of their nervous system, and then only a very small proportion of the descendants grow up as useful members of society.

Rev. Peter Thompson, of the "London Mission," in an essay read by him at the recent Ecumenical Council at Washington, stated of the population of London over one million three hundred thousand are in poverty, more or less acute. In St. George's in the East, forty per cent. of the population belong to that class. Every thirty ninth house is a drink-shop, and forty-five per cent. of the adult deaths occur in the workhouse. Such conditions are absolutely appalling. The census statistics show that there are seventy-three thousand paupers in this country. Among the impure and fallen there is need for adequate provision of home life and employment.

There are many individuals who are suffering from inebriate inheritance transmitted from their predecessors, so that the smallest portion of alcohol or its ingredients plunges them into a state of intoxication, with the risk of committing some criminal offence, not intentional while under this influence. Whoever is held responsible for his aberrations and his wrong-doings is termed, and is punished as, a criminal. Whoever is considered irresponsible is no longer a criminal to be punished, but a lunatic against whose vagaries society takes pains to protect itself. The accused may not be wholly unconscious of the nature of the act, but he is beyond his own control, and powerless in this partial state of consciousness to resist his impulses. "Crime is the result of an evil impulse which ought to have been controlled, the controlling powers are the cerebral functions of judgment and will."

In England, France, and America, drunkenness is considered an aggravation of the crime, and should demand additional punishment. We remember, thirty years ago, a case where a young man, about sixteen years of age, was brought before the bar for theft, without any apparent motive, during an unexpected drunken outbreak. While standing in court he was suddenly seized with an epileptic fit, his first attack, and carried unconscious out of the court room. Because of respectability and good social standing of the family this case excited the greatest interest in the community where it transpired. Expert medical testimony was summoned on both sides at the subsequent trial, to prove or disprove the responsibility of the accused. A man of rare scientific attainments—Wible, of Kentucky—decided that the evidence clearly proved marked neurosis, and quoted Marshall Hall in support of his decision. Therefore he adjudged the accused as morally irresponsible of felonious intent. The prosecution summoned a number of witnesses who entertained an adverse judgment, which the Judge sustained, and the accused was not only held guilty of the act, but additional punishment was meeted out for the intoxication as an aggravation of the crime.

We have been able to trace the health history, with fairly complete account, for four generations of this case, marked Case I., as appended below. The question of the tendency of a family to morbid, mental, or physical conditions during two or more generations, of more or less varying kinds, is difficult to work out perfectly, though in a large number of instances we may get enough information to be very useful.

I have spent much time and trouble in endeavoring to collect such information; but there are two main difficulties in connection with all such attempts. From hospital patients and the criminal classes you frequently can get no reliable information whatever respecting any members of the family farther back than the immediate parents, and even respecting uncles and aunts and first cousins it is often impossible to learn anything. And when you get to a higher class of society, although the information may exist, it may be withheld, or you may be purposely mystified.

I shall now give the results of special inquiry in Case I., which by the kindness of friends I have been able to carry out.

Case I.—The great-grandfather of the young man mentioned above was a man of splendid physique, who lived very freely but died an old man—had suffered occasionally from sciatic pains and gout. His children, three sons, though strictly temperate, were men of eccentric and somewhat violent temper. One married a lady who died of phthisis, and among the ten children she bore him two sons died of phthisis, two sons became chronically insane, one son died of tubercular disease (aged fifty-six), two sons were living, at last account, at advanced ages, and have always been perfectly healthy and strong. One daughter died in middle age, not certain from what cause; one daughter lived to the age of eighty-six and then was attacked by erysipelas, followed by violent epileptiform convulsions—this continued for the remaining three months of her life.

The fourth generation of this branch of the family consisted of thirty-one individuals, of whom seven have died of scrofulous diseases, one from violence, and one from rheumatic fever. Among the survivors twenty-three have been insane, one recovered, one had a severe attack of erysipelas, corneitis, and iritis; one has been a sufferer from chorea, one has become phthisical. The remaining sixteen enjoy good health, but are distinguished, almost without exception, by a marked nervous temperament, indicated by an anxious tendency of mind, quickness of perception, æsthetic tastes, disposition of alternations of impulse and procrastination.

Case II.—A gentleman; highly nervous temperament; sciatica. Father died insane from drink, and other members of the family also, nearly or quite insane.

Case III.—A gentleman, aged fifty four; cerebral neuralgia; a great whiskey-drinker. Drinking hereditary for three generations. Father died insane, grandfather epileptic, sister phthisical, two brothers very eccentric.

Case IV.—Intercostal neuralgia in a girl, aged twenty-

four. Mother and two uncles phthisical, maternal grandfather epileptic and a drinker.

I shall conclude this part of the argument by stating the general result of my inquiries respecting sixty four hospital patients confined in prison (Jeffersonville, Ind.), 1878–79. I obtained evidence of the following diseases existing among themselves and their blood-relations: Epilepsy, fourteen cases; insanity, twelve cases; and drunken habits, fourteen cases. "Consumption," eighteen cases; "St. Vitus's dance," six cases. I am well aware these figures must be taken with caution, and that considerable doubt must rest on the accuracy of some of these details, more especially with regard to epilepsy, as it was impossible, with the greatest care, to be sure that this was not given by mistake for hysteria in some cases; and the same may apply to the statement that relations had suffered from "consumption."

The facts are given for what they are worth, and with the express reservation that their total reliability is far less than that of the account obtained from private friends who would usually be more prone to reticence on such a topic. This question is a mixed one of science and law, and is undergoing an examination at the present moment by the two professions in England. Sir Henry James, in reply to a letter of inquiry addressed to him by Sir Lyon Playfair, writes the view entertained by English law. This is, that in minor offences drunkenness is to be regarded as an aggravation—that when a man knows that drink makes him violent he is deserving of double punishment, first for the offence, and next for voluntarily incurring the state that invites its commission. If a man drank in order to inflame himself to the commission of a meditated crime, he is to be made responsible, whatever his mental state at the moment of the act.

But when it comes to the higher grades of crime and pathologic mental conditions originating in alcoholism, Sir Henry confesses to a difficulty, and his efforts to formulate rules are not satisfying, the question assuming an aspect more and more medical.

The doctors propose the word "drunkenness" for the drink habit that carries indulgence to the point of excess whenever it has the chance, and "inebriety" to describe the occasional or periodic outbreak which, however violent, punctuates periods of temperance.

A distinction is likely to be made, on which the English medical and legal experts will agree, between the acts of a maniac and the crimes of a crank. The "inebriate," as described by the medical man, is to have the benefit of the doctrine of irresponsibility which rightly shields the madman; the drunkard is not.

An appeal for total abstinence from intoxicating liquors as a beverage, which has just emanated from the Zurich Society for Combating the Alcohol Habit, presents the subject from a scientific and humanitarian point of view, and the dangers, political and social, which menace the future of Europe by the almost universal use of intoxicants.

Nearly the entire press on the Continent has stirred the communities to their very depths, as well as the recent utterances of the Emperor of Germany, who foreshadows the perils of increasing drunkenness. This appeal is remarkable in two respects. First, in its array of signatures, representing almost all professions, especially the educational and scientific circles. Second, it is remarkable for the strength, tact, and literary character of the appeal itself.

Count Leo Tolstoï is one of the signers of this document, and has helped to fan the flames of agitation throughout Europe. This subject is fast becoming the question of modern civilization. Science has shown beyond question the changes that are wrought in the organs of the body by the often repeated and free use of such beverages. These changes are occasioned by a process of poisoning, in many respects similar to arsenical poisoning, and are recognized as causes of degeneration, sickness, and death.

The direct action of alcohol as a narcotic resembles ether, chloroform, and morphine, and like them brings a more or less profound paralysis of the mental functions. The close relation of these poisoning effects to the social consequences that attend drunkenness and the drink habit begins to make itself manifest to the general intelligence. If it be true that not only the drinker transmits to the child an inferior constitution and a nervous system predisposed to all kinds of maladies, but also that the injurious effects of alcohol increase from generation to generation, it is time that some attention were paid to the peril that is in store for those who come after us. If into the life of every individual be introduced a factor that tends to enfeeble the strong and to kill the weak, must not the effect upon the people as a whole be to diminish the aggregate capability?

The foundation of all those terrible evils of social life, source and centre, arise from pre natal influences and the environments that surround them. These conditions have more influence than all that come after. The only hope for permanent progress lies in the proper education of the children, not alone from their birth and childhood, but before their development—at the vital starting point.

Educate our most intelligent people that man is responsible for the crime and miseries of the race through his own lack of wisdom and knowledge, and that these conditions can be changed through obedience to law. It is of more consequence to our present civilization to consider whether our posterity shall be idiots or insane criminals than if we have descended from apes.

The only means of advancing the race to the altitude which the best specimens foreshadow as the possibility of all, must come through the young men and women of today, the possible fathers and mothers of the future, through equal opportunity and co-operation as builders of the higher humanity.

In the study of nations, the institution of government, and the administration of affairs, man is not a success. His reliance, first and last, is upon force; justice and harmony, fraternity and purity, cannot be brought into human society by fighting. Neither is suppression reform, nor coercion progress, any more than the legislature or the policeman can make men honest or morally upright.

Though man does not bear testimony as a builder of the higher humanity of social progress in morals, his triumphs in material structures, marvellous inventive genius, and patient scientific research, manifest that it is through him to form the forces and elements of man's material needs. Yet, by the most skilful use of the scalpel and the microscope, science has not been able to discover why the moral qualities of humanity should bear such scant relation to the intellectual, so that crime does not diminish as men grow wiser, nor is even human happiness greatly served by all the discoveries of science.

The moral elevation aimed at must be achieved through the co-operation of woman, through the spiritual realm of the higher nature. In the order of all things she is a link between the material and spiritual, especially in her creative function, to give bias to the physiological and psychological processes of embryotic growth.

The administration of law will be in a healthier state when science and judicial theory combine in administration. Man will never be able absolutely to prevent the increase of crime until the development of noxious organisms are checked. The state should see that those who are criminals through heredity be imprisoned in an asylum arranged for the purpose, fed on wholesome diet, and made to work as much as their condition will allow. The detention to which they are doomed will favor the extinction of their class, as it will prevent the propagating their kind. Furthermore, those criminals who have been guilty of rape should be rendered physically incapable of future entailment. Annihilation of the criminal has little effect on the development of fresh crimes. We cannot prevent society protecting itself in its own way, but we should demand all the more urgently the radical reformation of society.

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REFORMATORY TREATMENT OF CRIMINALS.

FOR such as believe in the physical theory of criminal propensity, there will be found much for suggestive thought in the perusal of the recent yearly report of the State Reformatory at Elmira. For sixteen years this institution has endeavored to perfect a plan of reform for juvenile prisoners, based upon the knowledge of the moral and physical defects which presumably resulted in their criminality. Although working in an entirely new field, the results have been very satisfactory, and are likely to prove even more so as the system becomes elaborated and perfected. The principle upon which its course of training is founded is so eminently rational and so demonstrably practical, that it must in the end initiate a widespread reform in prison management. In one sense the Reformatory may be considered as an infirmary for the cure of crime, and the treatment of its varied causes. In other words, the criminal is viewed not as an animal to be punished, but as a human being who, with proper care, can be improved and made a useful member to society.

To quote the language of the report, "Every inmate of the Reformatory is at once a member of the compulsory community, and a candidate for a voluntary community. His detention is a period of preparation and probation for freedom." The sentence as to duration being determined by the degree of progress made, the highest incentive is thus offered for voluntary and cheerful submission to the discipline of development. Fitting each case to its special needs, hereditary proclivities are overcome, bad habits cured, higher moral tendencies encouraged, and physical defects remedied. To such ends suitable trades are selected, certain studies are obligatory, while different gymnastic trainings and military drill round out the necessities for the purely physical requirements of the inmates.

The report further says: "The average period of detention of the 1,290 present inmates is 15 months, and the average detention of those paroled during the past year was 21 months. One hundred and twenty-one men, physically or mentally defective, or abnormally lacking in moral sense, were treated in the gymnasium to systematic physical culture of baths and exercises with satisfactory results. By aid of this treatment some men are improved who would otherwise remain incorrigible. During the year 1,537 different inmates received the benefit of more or less practice in one or more of forty mechanical trades or occupations; and of the 369 prisoners paroled 307 went directly or indirectly to the trades they learned here. Of the others, 26 were paroled to clerical and laboring situations, five to trades previously learned, and 31 entered the service of the Reformatory as guards or monitors.

"The progress of the 1,080 pupils enrolled in the School of Letters at the commencement of the year—October 1, 1890—is shown by their distribution among the classes on their admission and at the close of the year as follows:

	At admission.	At the present date.
Primary Classes	791	384
Intermediate Classes	164	346
Academic Classes	125	350
	1,080	1,080

"Effective military training has been applied this year to 1,637 of the 1,746 inmates. It is mainly by means of the military organization and training that it is found practicable to employ in situations here, for their own benefit and further test of fitness for release, so many of the inmates from the ranks. Forty-six of these are now engaged as subordinate officers, monitors, and employees."

This is certainly an excellent showing, but that yet more is to be known, and much more accomplished, is suggestively set forth in the following extract from the report of the General Superintendent:

"Scientists must yet find for us the true source of antisocial behavior, very likely to be discovered in the material substance, the defective tissue of the man. Then experience must demonstrate the methods and the possibility of permanently changing the channels of nervous action, producing habitually improved conduct, which is reformation indeed. For such an end, it is probable that much more attention will be bestowed upon the organism of the man, and that its preparation for right impressions will be sought from two avenues of approach, instead of one—through the body itself, and by way of the mind. Is it not possible that the activity of interest and scientific research in criminal anthropology, especially in Europe, and the investigations as to the power of suggestion in hypnotism, may supply additional light upon this most obscure of human problems?"

THE SHIP'S SURGEON AGAIN.

WE have so often had occasion to speak in terms of rather less than respect of the ship's surgeon, that our readers may be led to believe that our opinion of his ability is not exalted. And our readers would not be far from the truth. It seems, perhaps, a rather small matter, and one that concerns chiefly those whom business or pleasure sends to sea. And so it would be a comparatively small matter if it concerned only steamship passengers, although even then it would be of considerable importance to those passengers whether their lives were in the hands of a competent physician or an ignoramus. But it concerns a much larger number of people than

chose who cross the Atlantic from or to America, for it is a matter of vital import to every inhabitant of this and neighboring cities, if not of the whole country.

This city is menaced continually by immigrants bringing with them the seeds of disease, and the danger of an imported epidemic is ever present, and can be averted only by the greatest vigilance of the quarantine and city health authorities. It is the duty of quarantine to guard the entrances and keep those ill from contagious diseases from coming to the city; but few can realize the difficulty of such a task. If it is at times a hard matter to diagnose a case of incipient typhus fever or small-pox, even when there is opportunity for deliberation and careful examination, how almost impossible it must be in certain cases to detect a case of contagious disease among four or five hundred or a thousand immigrants moving in line before the quarantine officer on the deck of a steamship! The ship's surgeon, who has had the passengers as it were in quarantine for ten days or two weeks, is the one upon whom the responsibility of detecting contagious diseases should chiefly rest. But in order that the quarantine authorities may place any reliance upon him, he must be known to be competent.

A short time ago a case of typhus fever was detected by the health officer of the port in the person of a Russian Jewess, on the steamship Nevada. The astute surgeon on the vessel had supposed the case to be measles, the possibility of typhus occurring in an emigrant coming from Russian Poland by way of Hamburg and Liverpool seeming never to have entered his head. A man who could make such mistakes as that should not be allowed to practise on any vessel bringing immigrants to this port, and there ought to be some way whereby the United States Government could compel the steamship companies to employ experienced and competent surgeons.

THE GOLD-CURE ABROAD.

The Lancet publishes and discusses seriously and sadly the following item of information:

"The gold treatment for alcoholism and the morphine habit, which has been so largely advertised in America, is now about to be introduced into this country. To-day (Friday) a meeting is to be held at the Westminster Town Hall, under the auspices of the Church of England Temperance Society, and the chairmanship of the Right Rev. Bishop Barry, at which information will be given respecting this treatment and its results in sixty thousand cases. We hope that this information will go further than a mere reference to so many alleged cures. The drug used by Dr. Keeley is stated to be a double chloride of gold, but beyond this nothing is known. The formula, method of use, and dosage are kept quite secret. For twelve years Dr. Keeley is reported as having pursued this treatment at Dwight, Ill., and in that time sixty thousand persons are said to have been treated at the parent home, and at the branches established in various American States, with only five per cent. of relapses."

"Truly," our contemporary adds, "the methods adopted by some American physicians astound us. The running of a secret cure for one's personal profit would, in this country, insure the erasure of the inventor's name from the roll of any college of physicians or surgeons, university or medical society, with which he might be connected."

If *The Lancet* would take the trouble to glance over current American medical literature, it would learn that Dr. Keeley, if he is a doctor, does not hold any position on the roll of any reputable medical society or institution of learning. It would learn also that the gold-cure, so called, is generally regarded by the profession in this country as a purely commercial enterprise, and a form of arrant charlatanry. The claims for the cure are absurd and unsubstantiated, while, whatever be its merits, its secrecy and the purely business methods by which it is worked, have condemned it long ago. It will run its course like the Perkins tractors and the mind-cure.

THE SOUTH AND CHEAP MEDICAL EDUCATION.

The Association of American Medical Colleges has had a somewhat checkered and eventful history. It was organized originally in Philadelphia during the Centennial year. It led a rather precarious existence for many years. In 1884 there were about a dozen colleges on its membership list.

In 1890 it had a new birth, and with the increased interest now taken in advanced medical education, the prospects of its usefulness are very great. At the third annual meeting (new series), held in Chicago this summer, the attendance was good, and over two-thirds of the medical colleges of the country were represented.

The South alone failed to put in its proper representation, and one of the Southern schools formally withdrew from membership. The cause given was of a purely business character. The standard of the Association, it was said, is too high for the Southern medical colleges. Unless they all agree to elevate this standard, the one that steps in advance is "frozen out."

We trust that our brethren in the South will appreciate the situation: Their colleges are confessedly poor, and there can be no advance because the cheaper ones outbid the others. Southern physicians are sensitive to the imputation of commercialism, and they are justly proud of their capacity and resources as educators. We trust that they will speedily take means to correct the opinion which must now be frankly expressed, that Southern medical colleges are cheap colleges, not necessarily because they are inferior in equipment, but because they are low in their requirements.

The Profession in Germany.—From statistics furnished by our German Correspondent, it appears that the number of medical men in Germany registered for the year 1891 was 20,223, against 18,840 in 1890, making an increase of 1,383 for the year. This number is distributed thus: Prussia, 11,129, against 10,784 in 1890, increase 345. In Berlin alone there are 1,615 this year against 1,412 in 1890, increase 203. In Bavaria 2,219 practise medicine, and 2,346 surgery. Saxony has 2,616; Würtemberg, 690 doctors and 305 surgeons; Baden, 608 practitioners; Hesse, 467; Mecklenburg-Schwerin, 225; Hamburg, 376; Alsace and Lorraine, 577. The increase thus appears to be generally diffused.—*Medical Press.*

News of the Week.

Typhus Fever. — Several cases of typhus fever have been discovered recently on vessels arriving at this port, and some additional cases have developed among recently landed immigrants.

Four at a Birth.—A Philadelphia woman recently went to visit a friend, and there gave birth to four girls. The press despatch which conveyed the information also states that the father, who was breakfasting at the time, became greatly excited when the news was broken to him.

M. Pasteur, who has been suffering from cholera in Paris, was reported by the *Gaulois*, some days since, to be dying. We are rejoiced to learn, however, that his illness was not as serious as at first believed, and that he is now fairly convalescent.

Dr. Charles C. Johnson, one of the leading colored physicians of this city, died during the past week. He was born in Lynchburg, Va., on August 4, 1859, and began the practice of medicine in this city in 1889.

Dr. Fraser C. Fuller died at his residence in this city on July 18th. He was born in Boston in 1860, and studied medicine at the Homœopathic Medical College, and later at the College of Physicians and Surgeons in New York, whence he was graduated in 1882. He was visiting surgeon to the Charity Hospital and a member of several medical societies in this city. His death resulted from an injury received in the State camp at Peekskill. He was riding his horse to water barebacked, and was thrown and trampled upon, his right leg being fractured.

Measles in Japan.—There is an epidemic of measles in Tokio and other cities in Japan. The Emperor has been one of the sufferers.

Yellow Fever.—Four of the officers of the steamship Enchantress, which arrived here a few days ago from Santos, died of yellow fever during the voyage. These were the captain, purser, steward, and third engineer. Although it is now winter in Santos, the disease is said to be still very prevalent in an unusually fatal form. A despatch from the City of Mexico, dated July 19th, says that yellow fever has prevailed for some time in Vera Cruz, and still continues unabated. All who can are leaving the city to escape the plague. Many deaths have occurred among the foreign colony.

The Cholera continues to advance in Southeastern Europe. In Russia the disease appears to be ascending the Volga and now has passed Saratov, several cases being reported from Kazan. It is said also that cholera has appeared in Moscow. A number of deaths occurred on a steamer plying the Volga between Astrakhan and Kazan, and in three days there were seventeen deaths of passengers on the Trans-caucasus railway. Russia has extended her influence and commerce in Central Asia through this railroad, but is now paying the penalty, as it is by means of this same highway that the cholera has been brought into Eastern Europe. A serious riot took place in Astrakhan, a number of peasants having attacked the hospital under the impression that the physicians were burying their patients alive. The Minister of War has, in consequence, sent word to the commandants of garrisons to repress any similar outbreaks without delay, using ball cartridges if necessary. A death has occurred in Trieste from what is believed to have been cholera, and several suspicious cases are reported from a village in Roumania near the Servian border. A commission of experts sent by the Spanish Government to Paris to report on the "cholerine," has declared that the disease is true Asiatic cholera. In consequence of this report Spain has instituted a system of inspection along the frontier, and arrangements are being made for the thorough disinfection of the baggage of passengers entering the country from France.

Dr. C. C. Terry, of Fall River, died in that city on July 18th, from a wound received in fencing. The button on his adversary's foil broke and the weapon pierced his eye and entered the brain. He almost immediately lost consciousness, and died in about three hours. Dr. Terry was a graduate of the Harvard Medical School, and was fifty-five years of age.

Bird Tuberculosis as a Prevention of Phthisis.—MM. Hericourt and Richet have been investigating the prophylactic power of avian tuberculosis on dogs. On April 14, 1892, four "unvaccinated" and four "vaccinated" (with avian tubercle) dogs were subjected to inoculations with equal quantities of human tubercle. The culture, forty-five days old, was injected into the saphenous vein, one cubic centimetre being the dose employed. The inoculation was repeated on two subsequent occasions. On the same day three other dogs, already "vaccinated," received a single dose of human tubercle, either in the peritoneal cavity or in the saphenous vein. The results are most striking, for the four "unvaccinated" animals succumbed on the eighteenth, twenty-first, thirtieth, and forty-fifth days, respectively, while all their "vaccinated" comrades are still living, and apparently enjoying perfect health.

The Alumni of the Medical College of South Carolina (Charleston) have organized an association, and will establish and equip a laboratory of biology and pathology. Dr. Eugene Wasden, of the Marine Hospital Service, is President, and Dr. C. B. Calson, of Charleston, is Secretary and Treasurer.

Hereditary Transmission of Mutilations.—Dr. C. G. Lockwood, of New York, has recently published some interesting results of his experiments on the hereditary transmission of mutilations. White mice were selected on account of their rapid breeding, as they begin to breed when they are thirty days old and breed every thirty days. He bred them in-and-in for ninety-six generations, destroying all the sickly and defective ones, and in this way obtained a larger and finer animal than the original pair. His experiments in breeding their tails off were done by selecting a pair and putting them in a cage by themselves and clipping the tails of all of the young. When these were old enough to breed he selected a pair, and when they had young, clipped their tails. By continuing this breeding, in the seventh generation he got some young without tails, and finally got a perfect breed of tailless mice. By taking one with a tail and one without a tail, and alternating the sexes in each generation, he finally again got a breed of all-tail mice.

A Case of Toxic Central Amblyopia Terminating in Progressive Atrophy.—In the article with this title, published in the issue of July 16th, it is stated on page 70 that the acuity of vision in the left eye was $\frac{1}{60}$. Dr. Hinde writes that this should have read $\frac{1}{60}$.

Lesbian Love and Murder.—A young girl, living in Tennessee, formed Lesbian relations with another girl. The latter slackened in her devotions to perverted sexuality, and accepted attentions from a young man. The young woman of the first part thereupon became jealous, and in a fit of passion killed her girl lover, declaring that she could not live without her love. The trial for murder begins, and the claim of insanity is put in defence. The victims of sexual perversion may be in a sense insane, but we very much doubt if the law will hold them irresponsible.

Orificial Surgery.—Besides a railway surgery, an orthopedic surgery, an abdominal, a cerebral, and a pulmonary surgery, there is an oral, and a final and *fin de siècle* development known as "orificial surgery." It devotes itself, we take it, to treating scientifically the various openings of the body. Whether it includes such artificial openings as those made by boils and gunshot wounds, we do not know. But it flourishes enough to support a journal of its own, which comes at $2—rather a high price just for orifices.

Salt and Summer Diarrhœa.—Some years ago we recollect reading a monograph by a learned gentleman, wherein he showed that in cholera there was an enormous loss of chlorides and that by administering these in abundance the disease could be controlled. Experience has not proved this to be true, yet we doubt not that salt is a good thing to make prominent in the summer diet. A layman writes to the *Times* this testimony regarding it: "During the heated term people perspire much, and every drop of perspiration takes salt out of the system. In the hot seasons those scourges are most virulent. I have acted on this theory ever since I read the statement, in summer complaints and cholera morbus, with decided and immediate success in every case. I take a tumblerful of water, add a teaspoonful of raw corn-starch and a teaspoonful or two of common table salt, stir well, and drink it as much and as often as I can without causing nausea. The taste of salt is not ugly when the system needs salt. I have tried this more than a hundred times in cases of summer diarrhœa and cholera morbus, with invariable, prompt success."

The Red Cross Insignia.—The Committee on Foreign Affairs have reported to Congress the bill to protect the insignia and name of the Red Cross. The bill incorporates the American National Association of the Red Cross, and describes the badge as a Greek red cross on a white ground. It is provided that it shall be unlawful for any person within the jurisdiction of the United States to use the symbol of the Red Cross as a trademark or otherwise, and imposes penalties for violation of the law.

The Militia Surgeons of Canada.—The *Montreal Medical Journal* announces that an Association of the Medical Officers of the Militia of Canada has been formed. Over twenty charter members attended the first annual meeting, and quite a number of appropriate papers were ready and presented. Among the officers chosen for the ensuing year were: Honorary President, Surgeon-General Bergin; President, Surgeon, F. W. Strange; Vice-presidents, Dr. Moore, Dr. Roddick, Dr. Connell, Dr. McGillivray, Dr. Jenkins, Dr. Orton, and Dr. Duncan; Secretary, Surgeon G. Sterling Ryerson, of Toronto.

The Twentieth Annual Meeting of the American Public Health Association will be held at the City of Mexico, Mexico, November 29, 30, and December 1, and 2, 1892. The Mexican Government has interested itself in the work, thereby assuring the success of the meeting. All the details are in the hands of federal officers of the Republic of Mexico. The general Government has requested every State to send delegates. Invitations have also been extended to Central and South America. The session will continue four days, and owing to the expected large number of papers the Association will probably, for the first time, do its work in sections. Prominent sanitarians and scientists from the United States, Canada, Mexico, and the Central and South American republics will take an active part in the meeting.

Proprietary Medicines.—The Missouri State Medical Association has adopted resolutions condemning the practice, on the part of physicians, of giving certificates to manufacturers and proprietors of medicines, and also recommending to the profession the future discontinuance of such medicines.

Dr. George W. Van Voast, one of the oldest and most prominent physicians of Schenectady, died there suddenly on July 14th, of heart failure. Dr. Van Voast was a graduate of Union College, and also of the College of Physicians and Surgeons of New York. He entered the army and served until the close of the late war.

Yale Medical Department.—The seventy eighth anniversary of the Medical Department of Yale University was held on June 28th. The address in medicine was delivered by George M. Sternberg, M.D., of the United States Army. Twenty-two graduates received the degree of M.D.

Obituary.

CHARLES D. SCUDDER, M.D.,

NEW YORK.

Dr. Charles D. Scudder, a well-known physician of this city, committed suicide at Northport, L. I., on July 19th, while temporarily insane. Dr. Scudder had been suffering severely from nervous prostration for some time, but no such tragic ending of his life was in the least anticipated.

Dr. Scudder was born in this city in 1855. He was graduated from Trinity College, Hartford, in 1875, and from the College of Physicians and Surgeons, New York, in 1878. After graduation he studied abroad for a time, but returned to New York and began to practise about eight years ago. He had an extensive practice and was most favorably known among the profession. He had made a number of valuable contributions to gynecology. He leaves a widow and one daughter. He had many warm personal friends among the profession in this city, who have been both shocked and grieved to learn of his sudden taking off in the full vigor of early manhood.

Society Reports.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Fourteenth Annual Meeting, held at Boston, Mass., June 20, 21, and 22, 1892.

DR. S. W. LANGMAID, OF BOSTON, PRESIDENT.

The President's Address.—DR. LANGMAID opened his address with a touching reference to the loss of Dr. Donaldson, of Baltimore, and of Sir Morell Mackenzie—the former a Fellow, the latter an Honorary Fellow, of the Association. He then made a brief reference to the rapid advance which laryngology had made since only a few years ago, when it first took a prominent position among the specialties in medicine. He thought that our advance would be more greatly helped by faithful adherence to this Association. Companionship with fellow-workers was necessary to completeness of one's growth. Membership was not only a means of information, but it acted also as a stimulus to work. "Let us hope," he said, "that the next ten years will show such work performed that American laryngology will occupy no other position than that which has always been accorded it, namely, the first in merit as well as priority in establishment."

On the Influence of Certain Diathetic Conditions upon the Prognosis in Operations upon the Throat.—DR. D. BRYSON DELAVAN, of New York, read the paper. He called attention to the importance of discovering, before operations upon the throat, the possible existence of a diathetic condition which might influence the result of the operation, and described several such general conditions, including the strumous, the rheumatic, and the hemorrhagic diatheses, and the diseases exophthalmic goitre and general lymphadenoma. He concluded that in the case of the two last mentioned, the removal of enlarged tonsils and of adenoid hypertrophy at the vault of the pharynx was attended with no extraordinary risk. With regard to the prognosis in strumous cases, complete removal of the offending tissue is more difficult, recovery slower, and recurrence more probable. In view of the latter, patients should be warned, in these cases, of the possible necessity for future operation. Still, the earlier such cases are operated upon, the better. In rheumatic cases, no especial difficulties are offered, and the prognosis is most brilliant. The hemorrhagic diathesis is the most important, because the most dangerous. Its presence contra-indicates all surgical interference. The only known accidents that have happened in this country, in the removal of adenoid hypertrophy at the vault of the pharynx, have been in hæmophilic subjects. Adenoid enlargements are unusually common in these patients. There is no method of operating upon them, now known, that is safe. The galvano-cautery is not a reliable hæmostatic even in ordinary cases, as bleeding may occur after its use, both immediate and secondary. It should not be relied upon, therefore, in the case of bleeders. The writer urges, 1, that rigid examination as to the possible existence of the hemorrhagic diathesis be made prior to operation upon the tonsils and adenoid tissue of the pharynx in every case; 2, that in the existence of hæmophilia, operation by any procedure at present known is absolutely contra indicated; 3, that since many of these cases urgently require relief for their throat troubles, it is most desirable that a method of reaching them more satisfactory than any heretofore practised, be suggested.

Some Pathological Conditions of the Upper Air-passages Coincident with Attacks of la Grippe.—DR. S. HARTWELL CHAPMAN, of New Haven, read this paper. Beginning with November, 1891, it had been his pleasure during five months to observe certain secondary affections of the upper air-passages coincident with la grippe; and from a record of a large number of cases he had selected sixteen which were of more than ordinary interest, as the patients had previously been under treatment for other diseases from seven years to six months. Eight were cases of spinal disease, one of diabetes insipidus, four of renal disease, three of rheumatic gout. The onset of la grippe was quite similar in all these cases: headache, nausea, anorexia, flying pains, exhaustion, progressing to extreme malaise, moderate fever, pulse either considerably accelerated or greatly retarded, mild delirium, pain and stiffness in the back. He called attention to the close similarity between these symptoms of la grippe and the symptoms of the milder forms of epidemic cerebro spinal meningitis. In the rheumatic cases, the affections of the upper air-passages, during the attack of la grippe, were: in one, laryngitis crouposa, complicated with broncho-pneumonia; in two, aphthæ of mouth and pharynx, extending to the brim of the larynx. In the four cases of renal disease, the attack of grippe showed the following coincident affections: sanguineo purulent naso-pharyngeal inflammation, combined with acute tonsillitis and sympathetic enlargement of the cervical glands. The swelling of the tonsils became so great as to threaten suffocation, and was relieved by cutting. In some of them there was hemorrhage, but not dangerous; in one, croupous laryngitis. The duration of the naso-pharyngeal inflammation was about two months; of the laryngitis, only four days. In the case of diabetes, there was intense congestion of the entire pharynx and œdema of the larynx, which continued eight days and markedly interfered with breathing. During the severest period of the disease the pulse, which before had been very rapid, fell to 70, and the patient was less nervous. In one of the eight cases of spinal disease, causing humpback, a form of paralysis developed which had been absent for many years; and during the attack the pulse was reduced to 50, the normal being 80. The spinous processes were intensely sensitive. In three cases of curvature of the spine, in females, the attack of grippe was not severe, but in all there was reduction in the rate of the pulse, extreme malaise, and very sensitive spine. Secondary affections were aphonia and purulent naso-pharyngeal inflammation. Some other interesting points were also present.

DR. BEVERLEY ROBINSON, of New York, had not observed the complications mentioned by Dr. Chapman.

DR. MULHALL, of St. Louis, gave some experience with œdema of the larynx in la grippe.

Pharyngo-mycosis.—DR. FREDERICK I. KNIGHT, of Boston, had been induced to write upon this subject because of the little attention which it had received by authors in this country, hoping, he said, to draw out a discussion. Ever since special attention had been paid to diseases of the throat, observers had been struck by the peculiar obstinacy of chronic follicilitis of the tonsils, which had been not infrequently accompanied by a similar condition of the base of the tongue, and occasionally of the arches of the palate and of the pharynx. The affection consisted of whitish, yellowish, or grayish exudations, situated at the mouths of the follicles, sometimes cheesy and easily removed, sometimes cretaceous, and sometimes only tough, stringy, running deep into the follicles. There was quick recurrence after removal of the products, and even after the subsequent application of strong medicaments. Fraenkel had, in 1873, pointed out an abundance of leptothrix threads in such products, and some writers had looked upon the parasite as the cause of the condition. A number of other forms of parasitic growths in the throat had also been described. Other observers, notably Chiari, believed that the parasite was simply an accidental complication. In the treatment of typical cases of mycosis, the author had experienced the same difficulty as others, and found nothing satisfactory except boring deep into each follicle with a galvano cautery point. If any of the disease were situated in a part of the tonsil which could be excised, this would shorten the treatment.

DR. DELAVAN had found the treatment mentioned by Dr. Knight unsatisfactory, for enough of the leptothrix would remain to cause a recurrence. He had obtained

the best results from frequent washing with borax, also bichloride of mercury, and above all correction of disturbed digestion.

Dr. De Blois, of Boston, used instrumental means, also a mild astringent, as of nitrate of silver, and gave attention to digestion.

Dr. Johnson, of Baltimore, found these cases mostly debilitated school-children and old subjects. He used local and constitutional measures.

Dr. Mulhall, of St. Louis, had found nothing of any effect without treatment of the stomach.

Dr. Wright, of Brooklyn, said that these were fungi, and like other fungi would continue to grow as long as they receive the proper food.

Dr. Chapman treated these cases locally, with fuming nitric acid, introduced through a grooved platinum needle, and internally by nitro-muriatic acid.

Dr. Beverley Robinson had not seen many cases, but in one failed to effect a cure with various remedies until the patient went to Sharon Springs.

Dr. Langmaid did not object to correcting any constitutional condition, but regarded local mechanical measures necessary.

A Case of Fibrous Epithelioma at the Root of the Tongue.—Dr. Jonathan Wright, of Brooklyn, read the history of this case on account of the interest connected with the diagnosis, which was extremely difficult, and because of the rare form in which the disease presented itself. When he first examined the patient the tongue seemed normal except for two prominences on each side, at the base, which felt hard and firm. Grave doubts were entertained as to their exact nature for several months; finally, Dr. McBurney operated for cancer, but by this time an ulcer had formed which went to make the diagnosis more evident. The patient did well for a time, but finally died, without, however, a recurrence.

Report of Some Cases of Membranous Sore Throat.—Dr. Beverley Robinson, of New York, made three cases the basis of a paper on membranous sore throat. He used the term "membranous sore throat" advisedly. In the three cases reported, there was great difficulty of diagnosticating between true diphtheria and a membranous sore throat of some other origin. The bacteriological examination, however, failed to reveal the Loefler bacillus, while streptococci were present in greater or less abundance. The author pointed out the fact that failure to find the Loefler bacillus did not necessarily disprove the existence of diphtheria. He impressed the fact that a membranous sore throat of a simple character compared with diphtheria might exist, and one still be in great doubt as to diagnosis. Where such doubt existed, he claimed that it was unwise to prematurely make a diagnosis of true diphtheria, and cause the family the alarm and trouble which such an announcement would necessarily imply. At the same time certain precautions could be taken against unnecessary exposure of the well. He especially objected to sulphur fumigations. The treatment, however, might be carried out with all of the precautions which one would take in a case of true diphtheria. In this direction he spoke highly of the use of powdered cubebs, taken in small pinches into the mouth at frequent intervals. He must acknowledge, however, that the antiseptic powers of cubebs in the destruction of the Loefler bacillus had not been proven, at least outside the human body. He condemned the custom of the health officers in some sections of posting houses with diphtheria, as if persons passing such houses and not entering them were liable to take the disease.

Considerable discussion followed, and a resolution was adopted, making as a subject for discussion at the next annual meeting "The Best Means of Protecting the Public Against the Spread of Diphtheria."

Presentation of Instruments.—Dr. Morris J. Asch, of New York, presented a tampon for use after operations for deviation of the nasal septum. The tampon consisted of a hard rubber tube, with perforations.

Dr. Asch also presented a set of Dr. Dessau's antiseptic electrodes and curette for adenoid growths.

Dr D. B. Delavan, of New York, demonstrated a new method of administering iodide of potassium in cases of tertiary syphilis of the throat, where the ulceration had become so severe that the patient could not swallow with ease. The method consisted in peptonizing the milk with the essence of pepsin, in which the iodide of potassium was to be administered.

Dr. J. Wright, of Brooklyn, presented an improved forceps for the removal of adenoid growths in the post-nasal space.

Dr. John O. Roe, of Rochester, presented an improved Adams forceps for straightening the nasal septum. It possessed the advantage of enabling one to over-correct the deformity.

Dr. C. H. Knight, of New York, showed an improved snare for removal of the tonsils, with a ring-safeguard.

Intubation for Chronic Stenosis in a Boy Aged Ten.—Dr. C. H. Knight, of New York, read the history of this case. The boy was admitted to the hospital in October, 1891, and, according to the statement of his physicians, he had been ill for a week or more with dyspnœa, aphonia, cough, and fever; there was a history of bad hygiene and poor diet. When admitted, the patient could not whisper, and his breathing was quite noisy and labored. A marked feature in the case was that the dyspnœa was decidedly more marked at night; it was relieved by inhalations of oxygen. The boy's condition grew worse, and on November 8th Dr. Jarvis examined him and thought he found a neoplasm beneath the vocal bands. The vocal bands were red, and did not approximate on phonation. Beneath the cords, extending along their entire length and invading the anterior commissure, was a mass of tissue, paler in color than normal mucous membrane, having an uneven, and at certain points an almost papillated, surface. No ulceration could be discovered. The air-passage was converted into an irregular slit, so narrow as to excite surprise that adequate respiration was possible. Owing to dyspnœa an O'Dwyer tube was introduced, which was worn, more or less, for many weeks. It was impossible to get sufficient of the pathological tissue to make a satisfactory microscopic examination. Dr. Knight's first impression of it was that it was tubercular, but the absence of pulmonary signs and the marked change for the better subsequent to intubation, pointed to simple subglottic papilloma. After about three months, the boy having got along well with the tube (which was worn only part of the time), he was transferred to the surgical division for tracheotomy, thyrotomy, and radical extirpation of the neoplasm, the idea still being that it was a purely local affair. From this time the progress was rapid toward death from general tuberculosis.

The points of interest were: 1. The simplicity of intubation as compared with tracheotomy, and the ease with which the tube was extracted with the aid of cocaine and under the guidance of the mirror. 2. The slight amount of disturbance excited by the tube, and the absence of objection to its prolonged retention. Finally the question suggested itself: Was it a case of primary laryngeal tuberculosis? He believed the patient was much more comfortable than he could have been with the tracheal instead of the laryngeal tube.

Rare Forms of Laryngeal Growth.—Dr. Alexander A. MacCoy, of Philadelphia, in a paper with this title, described two cases, one of myxoma of the larynx, which had come under his care in 1888; the other of fibroma of the larynx. The former condition was quite rare; the latter not so infrequent. The myxoma seemed to have its origin from the margin of the orifice of the ventricle. The patient's voice was completely restored after its removal. In the other case, most of the growth was removed by the cold snare, and the remaining part would be operated upon later. It appeared to have sprung from the anterior and right surface of the arytenoid cartilage.

A Case of Tumor of the Larynx.—Dr. H. L. Swain, of New Haven, in a paper bearing this title, related the history of a case of fibro-myxoma of considerable size, attached by a pedicle to the anterior commissure of the vocal cords. He related the difficulties which he had encountered in removing this large growth, whose base was spread out over a greater surface than he had supposed. Its removal had been followed by relief of the difficulty connected with phonation and respiration, and the patient had remained free from recurrence two years.

Dr. C. C. Ride had found the guillotine snare more easily applied in the removal of small laryngeal growths than the forceps. He also mentioned having had syncope follow the use of four per cent. of cocaine in the throat, in the case of a policeman, recently.

Dr. Langmaid had, on the recommendation of a European author, used nicotine in operation for growth in the larynx in one case, and a very threatening poisonous symptom developed.

The Value of Sprays in the Treatment of Catarrhal Affections of the Upper Air-passages.—Dr. C. C. Rice, of New York, said that in discussing this question it was not his object to recommend the spray as a method of treatment to take the place of others. He considered the question of the use of sprays in the form of medicated oily agents, of watery solutions, of astringents, etc. While remarking upon some of the advantages of petroleum preparations, he at the same time pointed out the danger of their inconsiderate use, in that they were followed by a dry condition of the nasal passages, which was anything but agreeable. Such antiseptics as iodoform and aristol lost much of their antiseptic properties when used with oily agents, nor could their stimulating action be so well relied upon when thus used. In catarrhal affections of the upper air-passages nice judgment was required in selecting the drug, and particularly the strength of the solution to be used as a spray. The pressure used and the temperature should be adapted to the particular case, and the location to be reached by the spray. A weak solution of cocaine, say less than one per cent., was, perhaps, as good an astringent as any, and its place could seldom be taken for any purpose by such agents as morphine, aconite, etc. So far as the degree of pressure was concerned, fifteen pounds to the square inch was strong enough for the anterior nares, while twenty-five to thirty pounds was sufficient for post-nasal spray. All possible combinations could be made with cocaine, menthol, thymol, etc. By such treatment he believed that one could diminish the number of operations for nasal disease.

Considerable discussion followed, in which Dr. Bosworth, of New York, spoke rather disparagingly of nasal sprays as anything else than a cleansing measure, while Drs. Mackenzie, of Baltimore, Asch, of New York, and others, were inclined to give it a greater degree of credit.

Adenoid Forceps.—Dr. J. W. Farlow presented a form of adenoid forceps, which he had purchased in Paris, and had found an excellent instrument for removal of adenoid growths in children and adults.

The Correction of Deformity Resulting from Abscess of the Nasal Septum.—Dr. John O. Roe, of Rochester, presented photographs illustrating the results of a new method for correcting this deformity, which he had found very successful in two cases. The method adopted by Tagliacozzi, and in use at the present time, consisted in the correction of the defect by a rhino-plastic operation. A serious defect, however, in this method was the unsightly scar resulting from the operation, which was sometimes scarcely less pronounced than was the original deformity. Five years ago Dr. Roe had submitted to the profession an operation for the correction of the deformity termed pug-nose, by a subcutaneous incision, without in the slightest degree wounding the skin; and again, in 1891, an operation, equally new, for the correction of angular deformities of the nose by subcutaneous incision. At the present time he wished to present a simple method by which the deformity frequently resulting from abscess of the nasal septum might also be corrected, by a subcutaneous and intra-nasal operation. In the case detailed, after considering the various devices to accomplish this purpose without injury to the skin, he adopted the following plan: There was, as usual in these cases, marked thickening and widening of the dorsum of the nose proportionate to the amount of flattening. The thickened ridge of tissue was incised on both sides a short distance from the septum, at a point where it thinned into the ala. The incision was made along the edge of the flattened tissue through the cartilage of the ala to the under side of the skin, care being taken not to wound the latter, which was raised from the dorsum of the nose, and these flaps then turned upward and held in place by small ivory spring plates on each side, having holes through which sutures were passed from one to the other, extending through the flaps. These threads were then tied so as to hold the flaps firmly in place, care being exercised not to strangulate the part. These relieved the flattened condition of the nose, but not entirely. Owing to the entire absence of the triangular cartilage, there was not sufficient support to hold the nose upright. In order to increase the solidity of the septum, he first scarified each side of the lower portion of the septum, leaving, however, the front portion of the skin intact. He then cut wide, thick flaps from the floor of the nostril opposite the portion of the septum which he wished to render more rigid. These he turned upward and fastened together with clamps, in the manner similar to the upper flaps, and also connected the upper border of the flaps to the cut portion of the septum with fine sutures. The result was excellent. To maintain the nose in position until the parts healed he used a small spiral spring.

The After-results of Nasal Cauterization.—Dr. T. A. De Blois, of Boston, read the paper. Owing to the difficulty of tracing patients upon whom operation had been performed which may not have proven ultimately successful, he gave the history of five or six in which he or others had cauterized the nose two or more years previously. In most of them the cauterization had been for an hypertrophied condition of the turbinated bone, and the immediate result, as far as relief of the symptoms was concerned, had been more or less successful. Two years subsequently the patients had returned, again complaining of nasal obstruction. A rhinoscopic examination had shown in some, on either side of the original scar left by the cautery, a swollen and projecting mucous membrane which blocked up the nasal passages. In another case, a somewhat remarkable one, the mucous membrane, which was thrown in corrugated folds, had been cauterized frequently at different hospitals. Some of these cases, and doubtless many others walking the street, showed that the cautery might fail of the desired effects by improper application, such as, on the one hand, making the scar tissue too deep, or, on the other, too shallow; and, again, of extending it through too great a distance or not far enough.

A somewhat lengthy discussion followed, which was devoted mostly to the immediate results of bad usage of the cautery. The efficacy and safety of this method of treatment, in cases to which it was adapted, was dwelt upon by Drs. Wright, Langmaid, Mulhall, and others.

A Case of Suppurating Ethmoiditis.—Dr. J. H. Bryan, of Washington, related a history of a case of suppuration of the ethmoid cells, terminating in caries, and illustrating the condition described as rhinitis caseosa. The patient gave a history of having suffered from caries of an upper molar tooth. In July her nose became closed, the secretions, at first watery, became thick and fetid. There was a pain over the bridge of the nose, extending along the infra-orbital ridge to the temporal region. Severe headache, pain on pressure of the eyeball, crepitating sensation under the orbit. On the left side of the nose were seen two mucous polypi attached to the anterior extremity of the middle turbinated bone.

After snaring off the polypi, the thick caseous secretion was observed to come from both the middle meatus and from above, between the middle turbinated body and the septum. Examination with the electric light showed the left antrum to be opaque, showing this to be complicated with the inflammation of the ethmoid cells. In spite of treatment the condition grew worse, until, on her way to his office, the abscess discharged spontaneously a great quantity of thick caseous secretion, after which the pain ceased and general health improved. The complications of suppurating ethmoiditis more frequently met with were abscess of the antrum, abscess of the orbit, and meningitis. In the above case, the antral complication was purely accidental, dependent upon a carious tooth.

Election of Officers.—*President*, Morris J. Asch, of New York; *First Vice-President*, S. Johnston, of Baltimore; *Second Vice President*, J. C. Mulhall, of St. Louis; *Secretary and Treasurer*, C. H. Knight, of New York; *Librarian*, T. R. French, of Brooklyn; *Member of Council*, S. W. Langmaid, of Boston.

Place of next meeting, New York, last week in May.

Correspondence.

THE HEALTH RESORTS OF THE RIVIERA

(Continued from p 616.)

VII.—Monaco and Monte Carlo.

(From our Special Commissioner.)

THE PRINCIPALITY OF MONACO—MONACO PROPER, LA CONDAMINE, MONTE CARLO, LES MOULINS—SITUATION AND POPULATION—BEAUTIFUL MONTE CARLO—THE CASINO AT MONTE CARLO—A CHAPTER ON GAMBLING—MONTE CARLO AS A HEALTH-RESORT—THE MOST FREQUENTED STATION ON THE RIVIERA—WINDS, TEMPERATURE, AND RAINFALL—A CLEAN CITY—OLD CESSPOOLS AND OTHER IMPERFECTIONS OF DRAINAGE—THE DRINKING WATER UNPOTABLE—TYPHOID FEVER AND OTHER DISEASES; THE COMITÉ D'HYGIÈNE—MEDITERRANEAN SORE THROAT—THE CASINO DISEASE—WALKS, DRIVES, AND EXCURSIONS—CAP. MARTIN—THE RIGI D'HIVER—THE BATHING ESTABLISHMENT—THEATRICALS AND CONCERTS.

Going eastward from Beaulieu, we pass the stations of Eze and La Turbie sur Mer. On the heights above are old Eza, once a stronghold of Saracenic plunderers, and Turbia with its famous tower, erected by Cæsar Augustus, which even now remains a picturesque ruin. Both are highly interesting places to visit, but neither of them are recognized winter health resorts. We now reach Monaco. This is the capital of the smallest principality in Europe, if not the whole world. Monaco is also the oldest established European dynasty, the reign of the Grimaldi going back in the direct line to the twelfth century. The Princes of Monaco were little better than robbers and pirates, down to the close of the eighteenth century. And modern Monaco, deriving its chief éclat from the famous gambling-tables at Monte Carlo, it is not a far fetched simile which likens the method by which the last scion of the ancient house of Grimaldi obtains his princely income to that in vogue during the reign of his forefathers. It is an interesting political-geographical anomaly that the dominions of this petty Prince of Monaco are now entirely within and, to a certain extent, under the protection of republican France. Yet the Prince is an autocratic ruler in his own territory, which looks about as big as Central Park, and is, perhaps, one-tenth the size of the Bois de Boulogne in Paris. The total area of his empire is barely two hundred and fifty acres. But still he insists on maintaining, in a liliputian way, the entire pompous rigmarole characterizing the court life of the most potent monarchs of Europe. He treats them as equals, and is in turn treated on the same exalted footing.

From the American point of view, nothing more amusing could readily be found than the elaborate copying of established royal forms and fashions in this miniature monarchy on the little rock of Monaco. The Prince sends his ambassadors to foreign powers; he has money coined with his own image; postage-stamps bearing his features are used by his loyal subjects; he has a standing army, mustering forty-eight men, with a war footing amounting to six extra heads; he has a Governor general, who rules during his frequent absences; he has judges and policemen; he has an established church with a real bishop at its head; he supports a Chamberlain, a Grand Almoner, a band of secretaries, ornamental attachés of every kind, and scores of other functionaries and dignitaries, who are considered essential furniture in every royal household, and who, like our own politicians, are always on hand on pay-day.

It has been observed that the etiquette of his court is of the most rigorous type, that his castle is a little wonder, and that his art collection is one of the best which exists. In this country, so blessed by Providence, the Finance Minister has nothing whatever to do, for the simple reason that all taxes have been abolished. The Minister of War finds it impossible to take active action, for his infantrymen are only cognisant of two drills—those of presenting arms to the Prince and of firing at the fishes, and yet whenever a new recruit is captured the poor fellow is almost drilled to death by his numerous superior officers. The Minister of Marine has only one duty, that of seeing that the twelve sailors of the Prince's yact are ready to go to sea when needed. The Minister of Public Works has no work to do, because the public property is only composed of a garden and three streets. The busiest of all officials is the Minister for Foreign Affairs, whose duty it is to assure all the powers that the prince has no intention of troubling the peace of Europe.

Perhaps it is proper for me to mention in this connection that the Governor of Monaco kindly supplied me with considerable information concerning this place. But I have naturally not relied on his statements alone, as they can scarcely be regarded otherwise than *ex parte* views For instance the Governor strenuously maintained that it was the large private fortune of his sovereign which permitted that exalted person to be so lavish in regard to the expenditure necessary for maintaining the principality in such splendid style. But as the Prince does not hesitate to pocket the enormous annual revenue guaranteed him by the Casino, in which, moreover, he is a secret shareholder, and inasmuch as he has stipulated in the new contract that he must be paid a percentage of all profits in excess of a fixed limit, and finally since it is well known that he does not spend on his principality one tenth of the money turned over to him by the gaming-tables, I feel constrained to differ slightly from that highly courteous gentleman of the old school, "Son Excellence M. le Baron de Farincourt, Gouverneur général de la Principauti de Monaco," late prefect under the third Napoleon. It is doubtless literally true that all the officials of the Prince are on his pay-roll. But as the Casino pays the Prince, there is no mystery about the actual origin of the money.

Small as it is Monaco consists of four parts, although the many new buildings recently constructed and still springing up have now practically obliterated the old dividing lines. First there is Monaco proper, on the famous rock, which runs some two hundred and fifty yards out to sea, and rises precipitously almost two hundred feet above the level of the water. Secondly you have the Condamine, the newly built business section, almost enclosing an attractive littte harbor of horseshoe shape. La Condamine is almost level with the sea. Then comes Monte Carlo, on a bold headland, joined westward by the former, and eastward by the fourth division, known as Les Moulins.

Monaco is only about nine miles in an easterly direction from Nice, and some six miles westward from Men-

tone. The principality forms a narrow strip of land running along the shores of the Mediterranean, and somewhat resembling an axe with a curved handle, the blade representing Monaco proper. The French communes of La Turbie and Roquebrune, formerly belonging to the Grimaldi, now mark the eastern and western limits of the principality. Its permanent population is about twelve thousand, but is rather rapidly increasing, possibly because the subjects of the prince are entirely exempt from military duty and taxation. The Casino alone gives employment to about one-tenth of the entire population of the principality. This Casino is the gaudy gambling-palace belonging to a stock company called the "Société des Bains de Mer," and is named by courtesy, and in books, the "Cercle des Etrangers."

It is impossible to convey any just idea of the first impression produced by the sight of Monte Carlo, that beauty-spot of the Mediterranean littoral. Prepared as you may be by the apparently endless succession of picturesque views, that greet you at every turn in these unrivalled regions, you are nevertheless fairly staggered by the astonishing vista unfolded before you, as the dazzling splendors of Monte Carlo first burst upon the eye. For the moment you are held spell-bound by a scene that, later on, seems nothing short of theatrical in its carefully studied effects. Give your imagination full swing and you will yet be unable to improve on what nature and art combined have here provided to feast the sense of sight. A second, a third, and all succeeding visits only serve to accentuate some particular point of attractiveness as regards the artistic arrangement of color, outline or perspective, in a picture that has been so often painted and described as to be now a sadly hackneyed subject for both pen and brush. Nevertheless the new-comer can never quite resist the temptation to exhaust his entire reserve stock of superlatives in the fruitless endeavor to do justice to the fairest of fair places. For where else can you find such groupings of bold bare rock jutting far out into the blue green of a billowy sea? In days of calm the Mediterranean seems a luminous expanse of rare turquoise that breaks in foamy fringe of white on the shoreline. But let it storm, and a surging surf tosses its angry waves against the beetling crags, whence a fretful spray is flung high up into the air and falls in a crystalline shower back into the mother lap of the seething ocean. On the rocks the never-ending contest of centuries has smoothed many a harsh outline down to softness. But that is all. The headland budges not. Its warm-hued ledges, so fantastically shaped, frown down forevermore upon the impotent rage of warring waves. Look landward now! Where can you gaze again upon so rich a foreground of carefully cultivated tropical plants luxuriating in sun-steeped gardens. Go one step beyond and a tangled mass of wildest heather, aloes, prickly pears, and countless other shrubs confronts you.

In what other land will you have all this bounteous verdure set off against a near background of steeply rising cliffs, intersected by weird and shadowy ravines? And then the vivid contrast of the wooded slopes, thickly studded with palms and evergreens, with locusts and with olives, while everywhere the white villas gleam and glint, burnished by the fierce light of a golden sun. It seems too much for mortal sight, and the eye rests gladly at length upon the dull gray monochrome of the higher mountains, or searches quite beyond where it knows snow-clad Alps rear their monarch heads high up into the deep azure of an Italian sky.

As you wander about in this land, glowing in the cloudless light, even common objects seem as if transfigured into things of radiant beauty. At every step orange and lemon groves temptingly greet you, many-colored butterflies dance through the perfumed air, a few startled birds flit hither and thither, myriad roses are in full bloom, a vagrant breeze wantons in quivering foliage, the distant surf languidly mumbles its lullaby. Every sense is appealed to in a symphony of delight. And all this happens in mid-winter, when any train will carry you in a few hours to a snow-bound landscape.

Call it a terrestrial paradise, a scene from fairyland, a day-dream, or anything you like. Yet the bitter fact remains that, as it stands to day, it is in truth but a poetical prelude to the cynical prose of a gambler's gilded palace.

There it stands, that showy building, a mockery to all. For we each and everyone of us contribute, at least once, to maintain it in all its gaudy iniquity. Personally I have no kind of sympathy with that narrow minded, hypocritical perverseness which upholds all kinds of disguised and private gambling, while openly denouncing as ultra-vicious the only public den at beautiful and seductive Monte Carlo.

But gambling is gambling, and we might as well look this social evil straight in the face. We will then be forced to admit that more real gambling is done in the United States, and elsewhere too, for that matter, than at fifty Monte Carlos.

Curiously enough, recent issues of our leading magazines all deal with this question. And as no Monte Carlo article would be considered complete without a reference to this evil, I cannot do better than give a few quotations. The writer in the *North American Review*, February, 1892, starts in this way: "What the Louisiana Lottery Company is doing for the State of Louisiana by corrupting officials, bribing public servants, destroying public morals, breeding crime and dishonesty, wrecking homes, and impoverishing the laboring classes, the pool gamblers of New York and New Jersey are doing for these two States."

Regarding Uncle Sam's liberty-loving children we are told: "This nation is fast earning an unsavory reputation because of gambling propensities. Moral and religious influences seem to have no effect in checking this degrading passion. Year after year the gambling fraternity are becoming more and more strongly intrenched, while continued success renders them more and more arrogant and unscrupulous. Political leaders in both the Republican and the Democratic party, in localities where gambling is especially carried on, appear to be hand in glove with the principal 'boss' gamblers. Coming down from the halls of legislation, this dishonest and piratical crew enter the halls of justice and demand that the laws shall not be enforced against the members of their various fraternities. The hands of prosecuting attorneys are fettered by the command of political 'bosses,' or corrupted by the 'hush-money' of those who grow rich by violating the laws of the land. Underneath the surface, hidden from public view, there seems to be a positive understanding between political leaders and gambling 'bosses' that if the gambling 'bosses' pay liberally of the funds dishonestly taken from others, in support of local politics, the members of the fraternity so paying shall have immunity from interference or punishment by public officials.

"The demoralization flowing from these schemes has entered the marts of trade, honeycombed commercial institutions, and undermined the stability of banking corporations. Our young men are rendered dishonest, and ruined by thousands each year. Defalcations, embezzlements, forgeries, thefts, robberies, breaches of trust, suicides, and murders are breaking out in our midst as the harvest of this seed-sowing."

It ill becomes an American to lift his hands in holy horror at wicked Monte Carlo, if the above represents but a tithe of the actual truth.

Again, apropos of the Louisiana lottery, that has only quite recently received its quietus, Mr. Hale says (*The Cosmopolitan*, February, 1892) that "gambling is bad enough anywhere, but to carry gambling to the door of every hovel and attic, to invite the very poorest people in the country to engage in gambling, by the attractive and seductive hope that great wealth will come of a sudden, is to break up by the State itself habits of industry and thrift. It is to say to people, 'You shall not even

be at the pains of going to a gambling-hell. You need not even take the time to study the intricacies of *rouge et noir*. We will do your gambling for you. You shall press the button and we will do the rest.' Now there needs no argument to show that a State or a nation which is undertaking to suppress gambling is belying its own words if at the same moment it creates an elaborate and attractive system of gambling, and gives to it all the dignity which belongs to an arrangement sanctioned by law."

Finally, Mr. Buel, in *The Century*, also for February, 1892, makes use of some pretty plain language. "We as a people," he says, "have a growing courage of our gambling propensities." The memory of Thomas Jefferson is invoked, as he might be interested to see how large a part the wheel of fortune plays in our present "pursuit of happiness." "As a lover of democratic equality, he would see tens of thousands mingling amicably in 'exchanges' of different sorts where no particular gamble is raised above any other gamble; where the old and the young, the affluent man of success and the young clerk or messenger-boy just beginning his business life, make their bets on the results of horse-races, or base ball games, or pugilistic encounters, or even on the outcome of the American citizen's proud exercise of the right of manhood suffrage. As a maker of laws he would be amused to learn that the laws of the land are opposed to all these practices, which nevertheless are carried on openly because the hearts and souls of the people cry out for them. As the founder of a university he would speculate on the importance of athletic contests in our college life, and observe, if he had half an eye, that nine out of ten of the students also speculate on them. As a one-time advocate of a national lottery, he would be interested to know that the yearly proceeds of the Louisiana Lottery have grown to be twice as large as the revenues of the United States in 1800. The Louisiana Lottery is the most important training-school we possess for the higher gambling institutions of our grand republic. It is the kindergarten, so to speak, in which the happy school boy or the luckless orphan may bet the dimes he has hoarded, begged, or stolen; and it is the sequestered sanctuary where the frugal housewife or the lone widow may also drop her nickel in the slot and cause the wheel of fortune to revolve for her. It is after this manner that lotteries do good by stealth. And let no purse-proud statesman who will not be beggared if he lose his political wager, nor any well-to-do citizen who thinks the thrill of losing a thousand dollars on a horse-race is worth all it costs, nor the gentleman who enjoys the sedentary amusement of 'bucking the tiger,' presume to take from the poor their cherished game of chance! The profligate rich have ever been ready to resent the so-called pernicious amusements of the poor!"

It seems needless to go on multiplying quotations. But this much may be said: When we have driven the scourge of gambling from our own shores, when we have purified the nation of its gambling instincts, it will then be time enough to tell the Prince of Monaco that he ought to follow suit and shut up his gilded den. But for the present we can save all our eloquent thunder for home consumption. And for the information of those who have supposed that by influencing public opinion through their writings the Prince might be induced to stop the game, I will state that he has not the remotest intention of so doing during the remainder of his natural life, no matter what may be said, thought, or written by outsiders.

After this digression we will turn to more strictly medical subjects, although every physician on the Riviera well knows that Monte Carlo gambling has decided pathological bearings, and is directly responsible for many serious departures from health, in addition to certain sudden departures of a different kind.

There is no doubt that this place has recently become a favored residence of invalids, who are attracted solely by its advantages as a winter health-resort. My experience on the Riviera enables me to state as a positive fact that many more people go to Monte Carlo to gamble from the various resorts near it than from the town itself. Cannes, Nice, Mentone, and even San Remo, send their daily quota of gamblers there in uncomfortably crowded trains. And those who have no inclination for the silly game may just as well live within a stone's throw of the building itself as miles away. I cannot, therefore, quite agree with those who would warn people away from Monte Carlo merely on account of the gambling going on there. If they are so weak as to have to yield to this particular temptation, they are better off at home than on the Riviera. It has seemed to me, however, that Americans are abundantly able to take care of themselves wherever they may happen to be. It was necessary to state my views on this point, because I believe Monte Carlo could be made one of the best winter stations on the whole coast. Even now every possible accommodation is offered there, and the only criticism one can justly make on that score is that the hotel and restaurant rates are often exorbitant. But if it is not a cheap place, it certainly can claim to be a good one, at least so far as the provision of American comforts and luxuries is concerned. This is considerably more than can be said for some other winter stations that are scattered along the coast here.

As already intimated, all Riviera roads lead to Monte Carlo. Even the road to ruin runs a prosperous branch-line down to that charming spot. Indeed "wintering on the Riviera" means for many people, whether of high degree or low, whether actually rich or only willing to rapidly be so, whether severely virtuous or equally otherwise—wintering on the Riviera means for a motley crowd of thousands of visitors "bucking the tiger" on the green cloth of the most famous gambling den of modern times. It is small wonder, therefore, that "the company" secures an annual booty from the numerous flock of casino frequenters amounting to some eight to ten millions of dollars. And it is not at all surprising to hear that an enterprising American company is anxious to start an American Monte Carlo in Lower California. They certainly have an excellent climate down there. But I am not so sure that they could draw enough native fools to the place to make it pay. Besides we have our Wall Street, and can manage to worry along without an imitation Monte Carlo.

Monte Carlo is one of the warmest winter stations on the coast. But it is not true that it enjoys a more equable temperature than all other resorts. Sudden thermometrical variations occur there just as elsewhere on the Riviera. Some parts of the principality are very well protected from winds, while others are decidedly exposed to them. The bare rocks rising up to a considerable height, immediately back of Monte Carlo, afford ample protection from cold northerly winds, and by reflecting the sun's rays appreciably raise the temperature in their vicinity. But when the sun has set the succeeding chill is felt all the more violently, though the actual fall of temperature is less abrupt and less perceptible than our sensations indicate. It would occupy too much space to go into details here concerning the physical configuration of the various sections of the Monégasque territory, but the reader may infer from these general indications that some well-sheltered and warm nooks can be found at Monaco. For well-to-do invalids the place will doubtless be made increasingly attractive, on account of the large sums of money spent annually for improvements. But people don't save money by going there, even when they gamble and win. The rainfall and the proportion of sunny days to cloudy ones are about the same as Nice or Mentone, and need not be separately considered. One advantage in favor of Monaco is that less dust is found there than at Nice, Cannes, or Hyères.

All Monaco, excepting a few alleys in the older quarters, is undeniably kept in a condition of admirable

cleanliness. The paving is in good repair, the roads are not very dusty, frequent sweepings and flushings impart to every street a look of trim neatness that offers a marked contrast to the neglected state of some other Riviera resorts. Yet surface cleanliness is only one factor conducive to healthfulness. In some respects Monte Carlo is more dangerous than dirtier towns.

Excepting the low lying quarter called Condamine, Monaco affords every natural advantage for a perfect system of drainage. Yet so far from being in good shape, this essential sanitary requirement leaves much to be desired here. It is true, drains have now been established in all the principal streets, and most of them have a sufficient natural incline. But, as elsewhere on the Riviera, the house connections are insecure and dangerous. This applies more particularly to the old house-pipes that were subjected to the violent shaking up of the earthquake a few years ago. The authorities are only just beginning to realize that, in spite of the prevalent English closets, some radical reforms may be needed.

Many of the old, poorly constructed, unventilated cesspools still exist, and receive the house soil. As plenty of water is now used they would have to be emptied every two or three weeks. But house-owners, in order to avoid this expenditure, have, in spite of forbidding law, connected their cesspools by overflow pipes with the main sewers. Cut off traps having been quite generally omitted, the obvious consequence is that sewer gas is almost certain to enter all hotels, villas, and lodging-houses provided after this obsolete fashion. The evils of so reckless a system are to some extent counteracted by the winds that cleanse the polluted atmosphere. But the night-air of such dwellings is bound to be dangerous, and, whenever possible, windows ought to be kept open all night. I am bound to state, however, that offensive odors, such as are so often justly complained of at Nice, are only rarely experienced at Monte Carlo. But Nice is eight times the size of Monaco, as regards population, and as the latter place grows, the present evils are sure to augment, unless proper precautions are taken.

The sewers, intended only for surface waters, now discharge into the landlocked little harbor, which is an additional nuisance, fraught with potential danger for this place. But to my mind the chief menace to health at Monaco lies in the fact that the authorities, in place of frankly admitting the present insecurity of their town, stubbornly refuse to see that anything short of perfection is to be found there. Unless a more modern spirit comes over them, they will some day have reason to regret this ostrich-like stupidity and obstinate optimism. English sanitary engineers have lately issued documents certifying the good condition of most of the larger hotels. The plumbing of some of the new houses is also good. But apart from that, things are as stated above, *i.e.*, unsatisfactory and unsafe.

A branch of the open canal la Vésubie, already described in connection with Nice, conducts the water from that town to Monaco. Exposed as it is to all kinds of contamination this water cannot be considered potable before having been subjected to the double processes of filtration and boiling. This is so well known at Nice that there the Vésubie water is only used for street-cleaning, sewer flushing, and other municipal purposes. But the Monégasques believe in the purity of this water and seem to drink it without detriment to their health. Of course that is no reason why a foreigner should indulge in what to him might prove a costly experiment. It is satisfactory to know, however, that the authorities are looking for better water.

Through the courtesy of the Chevalier de Loth, the United States Consular Agent at Monaco, I was allowed to examine the source of a new water-supply for the principality. It is a rather curious one. Situated at no great distance in an easterly direction from the Casino, and quite on a level with the sea, some limestone ledges abut on a little strip of sandy beach. It is here that limpid, sparkling, spring water has been found to well up out of the rocks. The work of constructing iron conduits and pumping the water up to the level of the town is already well under way. But I am unable to say anything about the composition of this water, beyond repeating the assertion of our consul that several analyses have shown it to be pure. It ought to be a very hard water, however, and it did not strike me that this single source would be likely to prove sufficient for the growing needs of the town. The true source of this spring is thought to be some subterranean reservoir that discharges its surplus through crevices in the rocks. If that be so, it would at least insure a permanent freedom from organic contamination, which the Vésubie water now employed cannot boast of.

There is no doubt that Monte Carlo is not free from typhoid fever. Every effort has been made to cover up this fact and keep it from the public. Even local physicians have not scrupled to lend their aid to this foolish policy of concealment, which never pays in the long run. Still, nothing in the shape of an epidemic has visited the place for several years past. And as a general rule zymotic diseases are neither of frequent occurrence there, nor do they, when encountered, readily assume a virulent type.

But hotel-keepers and other interested parties have not yet cared to learn the necessity of energetic disinfection of contaminated premises, furniture, bedding, etc., and this, despite the existence of a formidable bureau called the "Comité d'Hygiene publique et de Salubrité," with the Governor-general for its president. This board of health has been truthfully styled a mere farce by one of the most prominent British practitioners at Monte Carlo.

I regret that I am unable to present to the readers of the RECORD a study of vital statistics, and other authentic data concerning the health of the natives. The authorities have failed so far to keep their promise to supply this information, and the foreign physicians whom I consulted were quite in the dark, because they are refused access to the official records. But in a general way it can be safely said that, in spite of the occasional occurrence of typhoid fever at Monaco, the place is just at present healthy enough, the dangers I have alluded to being potential rather than actual.

It is estimated that half a million visitors now reach this place every year. Of course the vast majority of that number are mere recurrent or transient gamblers, who enter no other building than the Casino. Still the foreign winter colony is now said to be up in the thousands. And if Monaco were really the pest-hole that some persons who ought to know have informed me it is, even the autocracy of Monégasque officials could not have kept the truth from leaking out. As I have pointed out, there is enough room for improvement. But to exaggerate either the actual drawbacks, or underestimate the possible advantages of Monaco, would be equally unjust, and foreign to the purposes of the RECORD mission.

Febrile attacks accompanied by sore-throat are of frequent occurrence here, but they are not peculiar to Monaco, and rarely cause more than temporary annoyance. One attack does not at all confer immunity from subsequent ones. The malady is an ordinary smart tonsillitis, and scarcely deserves to be called "Mediterranean sore-throat," except by reason of its wide distribution and prevalence along the whole coast.

A worse place than the Casino, with its dusty, stifling, absolutely unventilated rooms, cannot be found for persons with a tendency to throat troubles. But even perfectly healthy people invite sickness there, especially by frequenting the gambling-tables in the evening hours. The Monte Carlo physicians have not yet coined a word for the most frequent local disease, although they must know it as a distinct pathological entity. I may, therefore, be permitted to enrich medical terminology by supplying the omission. The morbid state in question may be called "Maladie du Casino." It is characterized by headache,

depression, anorexia, the latter sometimes accompanied by nausea, restlessness leading to insomnia, misanthropy, and constipation. When seen in its early stages, change of climate promptly leads to recovery. But if not treated in that way, a worse state will surely follow, and may then seriously endanger the patient's prospects of a cure. The incidental depletion of the financial system is a frequent complication difficult to relieve, except by gold treatment.

Some fine roads now lead through lovely scenery to the near-by places. Yet people apparently grow lazy here, and the roads are often all but deserted. Favorite excursions are those on the upper and lower Corniche roads to Nice, to La Turbie, Eze, Roquebrune, or Mentone.

The drive to Cap Martin is also a pleasant one, and has become very popular since the advent there of the Prince of Wales, the ex-Empress Eugénie, and other aristocratic attractions. Cap Martin is the name given to a tongue of land that juts out to sea to the east of Monaco. It is thickly wooded and until the spacious new hotel was built there it was known only to enterprising picknickers and pedestrians. It is very much exposed to winds, but as most of them are tempered by having crossed the sea, it is less objectionable on that score than might be supposed.

Although quite a new resort with only one hotel it has already become a decidedly popular and much frequented one. Some fine private villas are soon to be built there. And it is hoped that in view of existing restrictions it will remain a small and exclusive place.

Walking at Monte Carlo can only be recommended to those who are able to combine climbing with their pedestrianism.

Under the auspices of the "Compagnie du Chemin de fer à Cremaillière d'interêt local de la Turbie," a new enterprise is soon to be launched. I am able to state, on the authority of the Governor of Monaco, that the plans are now complete for constructing a cog wheel railroad to run up a steep hill to Turbia from Monaco station. This will be sure to prove a great attraction here, as the view from Turbia is one of the most beautiful ones in all this picturesque region. Work is to be begun this summer and the road is supposed to be in running order in about one year. The rather ambitious name of Winter Rigi has been chosen for the mountain. Several other improvements are also in contemplation, but as they are not yet definitely decided upon I omit their mention.

The bathing establishment is expensively built and is situated at the Condamine. It is too much in the shade for winter open-air bathing, and its hygienic condition is unsatisfactory. In summer time it may be useful, but Americans do not frequent Monte Carlo at that season.

It may be mentioned en passant that the Casino provides excellent theatricals and music, and gives a classical concert once a week (free admission) which is not surpassed anywhere on the Continent. Of course this is a mere sop to the gambling fraternity. The lack of ventilation in the always overcrowded gaudy theatre is simply disgraceful. Apart from this no wholesome amusements are provided, all interest being centred in the gaming tables. If the authorities really and seriously contemplate making a winter sanitarium of Monte Carlo, in addition to retaining the dubious prestige of possessing a world-renowned "Casino," they will have to bestir themselves. There can be no lack of funds to do everything in the most approved manner. And judicious expenditure in that direction is never wasted. Monte Carlo can be made a real health resort, and that must be my excuse for having given so much space to this much-abused place, which most medical writers have treated so gingerly that its name is barely mentioned among the Riviera health resorts.

International Dermatological Congress.—The second Dermatological Congress will be held in Vienna from September 5 to 10, 1892.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending July 16, 1892.

	Cases.	Deaths.
Typhus fever	3	0
Typhoid fever	16	8
Scarlet fever	78	8
Cerebro-spinal meningitis	5	13
Measles	270	23
Diphtheria	64	21
Small-pox	11	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0
Mumps	0	0

Leprosy in the Caucasus.—In a paper read before the Caucasian Medical Society, Professor Minkh gave a history of leprosy in the Tersk district. He showed that it must have been in existence there among emigrants from the borders of the Don and of the Volga during the latter part of the last century, and that though there are no statistics of the number of persons affected up to 1840, it must have been appreciable, as there were lazarets in a good many places for lepers. From 1841 to 1883 the disease seems to have been steadily on the increase, but after that the number of victims rapidly diminished. It is an interesting fact that in localities where lepers were kept apart from healthy persons in special buildings the numbers attacked diminished, while in other localities where segregation was not practised they increased.—*The Lancet.*

Insanity of a Professional Faster.—Succi, the Italian faster, whose feats of long abstinence from food have made him notorious, has gone mad and is now an inmate of an asylum in Paris. He attempted to give an exhibition not long ago in London, but broke down, and the disappointment of his failure seems to have lighted up the already kindled flame of mental disease, the first symptoms of which became apparent during one of his fasting performances in Florence some four years ago. After his failure in London he went to Paris, and there was arrested one evening while creating a disturbance on the Boulevard des Italiens, proclaiming noisily that he was the mighty Cæsar.

Superiority of Medical over Clerical Missionaries.—Year by year, as the General Assemblies of the Scotch Church meet, the subject of foreign missions is dealt with. Annually, also, the account of the spiritual benefits conferred are calculated to afford amusement to the impartial reader. We are afraid to say how much each convert costs; the annual number rarely exceeds one or two at the different stations. From many of the missions, indeed, those in charge are perforce compelled to tabulate the number of "inquirers," having no real converts to announce. On the other hand, the reports from the medical side of these missions is much better reading. To take the case of the mission carried on by the Church of Scotland in Smyrna. Two Jews were baptized, one of them evidently in the habit of being so converted, during one year, while the doctor attached to the station treated one hundred and twenty eight patients in the hospital, made eight hundred visits, and altogether, counting his dispensary work, saw about four thousand five hundred cases, most of whom were Jews. As the medical man has to read the New Testament to his in-patients and preach to the out-patients once a week, his office, we imagine, can be no sinecure. In the report it is noted that many of the cases were surgical, requiring operations, and that all those operated on did well. Each convert cost £210, each patient, including those in hospital, 12s. 6d. —*Medical Press.*

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PHOTOGRAPHS OF PLATE CULTURES FROM DIPHTHERIA AND SCARLATINA — PARK.

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Original Articles.

DIPHTHERIA AND ALLIED PSEUDO-MEMBRANOUS INFLAMMATIONS—A CLINICAL AND BACTERIOLOGICAL STUDY.[1]

BY WILLIAM HALLOCK PARK, M.D.,

NEW YORK.

THE diagnosis of diphtheria has always been a subject of extreme importance in medicine.

Are all cases of diffuse pseudo-membranous inflammation of the upper air-passages, and all cases of membranous laryngitis, rhinitis, and tonsillitis the local manifestation of one disease—diphtheria? Are all these cases equally contagious and equally dangerous? These are questions which occur daily to the minds of practitioners.

The marked differences noticed in different cases have always forced on physicians the possibility that, under the term diphtheria, we may include more than one disease. When it was discovered that two different conditions existed in pseudo-membranous inflammations it was hoped that here we had a reliable diagnostic sign. One is a gangrenous inflammation, in which there is superficial necrosis, leaving on the removal of the adherent pseudo-membrane a bleeding surface; the other is an exudative inflammation, leaving on the removal of the loosely attached deposit an intact surface. The first was supposed to occur in true diphtheria, the second as a result of some local irritant, either chemical or bacteriological. Experience proved this test, like so many others, unreliable, and most clinical observers still thought it wisest to consider all pseudo-membranous inflammations as if they were the local expression of the acute infectious disease which we call diphtheria.

Since the discovery of the existence of bacteria, and of their relation to disease, a new hope has arisen that by the bacteriological examination of these pseudo-membranes we might get a truer knowledge of the disease called diphtheria, and settle the question, whether or no, under this name we should include more than one disease. At the outset the difficulties were very great, owing to the multitude of bacterial forms present in the mouth. However, persistent investigation, aided by the improved methods of bacteriological study, has overcome all these obstacles.

Although recent reviews by Loeffler,[2] Welch,[3] and others makes it almost unnecessary, it is thought best, in order to have the whole subject fresh in mind, to give as briefly as possible the reasons which have led to the acceptance of the Klebs-Loeffler bacillus as the cause of true diphtheria, this sketch to be followed by a summary of the chief characteristics of the bacillus, and the more important lesions produced by it. Finally, to present the evidence that a streptococcus is the most frequent agent of infection in cases of pseudo-membranous inflammation in which the Klebs-Loeffler bacillus is absent.

True Diphtheria.—In the year 1883, Klebs[4] demonstrated, morphologically, the constant occurrence of a bacillus in the pseudo membranes of those subject to epidemic diphtheria. Loeffler,[5] in 1884, published the results of a very thorough and extensive series of investigations. He found the bacillus described by Klebs in the pseudo-membranes in nearly all cases examined. He proved by inoculating that this bacillus was pathogenic in certain animals. When inoculated on the injured mucous membrane it produced a pseudo-membrane somewhat like that present in human diphtheria. He failed to find the Klebs bacillus either in the blood or organs of fatal cases of human diphtheria, or in the same regions of animals dying after inoculation. He came to the conclusion that the Klebs bacillus was the probable cause of true diphtheria. He considered, however, that further investigations were necessary to prove his conclusion.

Since then the whole subject has been examined with great care, not only by Loeffler himself, but also, independently, by a large number of investigators, both in Europe and America. The work of Roux and Yersin,[1] in Paris; Loeffler, in Berlin; Kolisko and Paltauf,[2] in Vienna; Ortmann,[3] in Königsberg; Zarniko,[4] in Kiel; Escherich,[5] in Munich; Beck,[6] Brieger,[7] and Fraenkel,[8] in Berlin; Tangl,[9] in Tubingen; Babes,[10] in Bucharest; d'Espine,[11] in Geneva; Klein,[12] in London; Welch and Abbott,[13] in Baltimore; Prudden,[14] in New York, and many others, has established that in all cases of typical infectious diphtheria the Klebs-Loeffler bacilli are present in large numbers in the pseudo-membranes, either alone or associated with other bacteria, and that the Klebs-Loeffler bacilli in all other inflammations of the throat and in healthy throats are very rarely found.

Pseudo-membranes, paralysis, and organic lesions can be produced in inoculated animals, similar to those found in human diphtheria. A toxine is produced by the bacilli which, when isolated and inoculated, produces the same results, with the exception of the pseudo-membrane, as the pure cultures.

All the conditions have now been fulfilled which are necessary to the proof of the dependence of true diphtheria upon the bacilli described by Klebs and Loeffler.

The Klebs-Loeffler Bacilli.—They are moderate-sized rods, usually slightly bent, averaging nearly as long as the tubercle bacilli, but twice as broad and usually with rounded ends. According to the rapidity of growth, the soil, and other conditions, the form and size of the micro-organisms varies, and the differences are striking in appearance. The bacteria are sometimes enveloped in a more or less capacious membrane; sometimes the contents divide into a number of pieces, separated by transverse divisions; one end of the rods is frequently thickened like a club, or both ends may be clubbed, or one or both pointed. The bacilli are immobile and have no spores. The best staining agent is Loeffler's alkaline methyl blue. Some forms stain uniformly, others in vari-

[1] Alumni Association College of Physicians and Surgeons Prize Essay, with additional cases.

[2] Loeffler: Deutsche Med. Wochenschrift, 1890, Num. 5 und 6.

[3] Welch: Medical News, May 16, 1891.

[4] Klebs: Verhandl. des zweiten Congress f. Inn. Med., 1883.

[5] Loeffler: Mitth. a. d. Kais. Gesundheitsamte, Bd. 2, 1884.

[1] Roux and Yersin: Annales de l'Inst. Pasteur, ii., 1888, p. 629; iii., 1889, p. 273; iv., 1890, p. 384.

[2] Kolisko and Paltauf: Wiener klin. Wochen., 1889, No. 8.

[3] Ortmann: Berlin. klin. Woch., 1889, No. 10, p. 18.

[4] Zarniko: Centralbl. f. Bact., vi., 1889, p. 154.

[5] Escherich: Centralbl. f. Bact., vii., 1890.

[6] Beck: Zeitschrift f. Hygiene, viii., 1890; Heft 3, p. 434.

[7, 8] Brieger and Fraenkel: Berlin. klin. Wochen., 1890, Num. 11 und 12.

[9] Tangl: Centralbl. f. Allg. Path. und Path. Anat., 1890, Bd. 1, p. 795.

[10] Babes: Zeitschrift für Hygiene, Bd. 5, p. 177.

[11] D'Espine: Revue médicale de la Suisse ro., 1888, No. 1, p. 49.

[12] Klein: *a*, Centralbl. f. Bact., vii., 1890, No. 17; *b*, Centralbl. f. Bact., vii., 1890, No. 25.

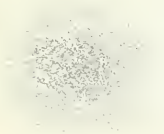
[13] Welch and Abbott: Bulletin of the Johns Hopkins Hospital, February-March, 1891.

[14] Prudden: Medical Record, April 18, 1891.

ous irregular ways, the most common being the appearance of deeply stained granules in a slightly stained bacillus, or of darkly stained ends with a paler centre. The bacilli are very often in pairs, never in chains; they are semi-anaërobic, and thrive only at a somewhat high temperature, 20° to 42° C.

The Loeffler bacilli can be cultivated upon all the ordinary culture-media, but grow most vigorously on a mixture of blood serum and nutrient bouillon, as given by Loeffler. On this, solidified, the bacilli grow as large, round, elevated, grayish-white colonies, with the centre more opaque than the somewhat irregular periphery.

The Sections of Diphtheritic Membrane show on the surface and in the most superficial portions of the pseudo-membrane Loeffler bacilli mixed with more or less numerous other micro-organisms. In the middle and deeper portions the Loeffler bacilli, alone or associated with streptococci, are usually the only organisms present. In the deepest layer there are very few bacilli and in the mucous membrane, as a rule, none. Extremely rarely they are found in the blood and viscera. Some of those bacteria which are associated with the Klebs-Loeffler bacilli in diphtheria, especially the streptococci, may be found in the mucous membrane, lymphatic glands, and internal organs.



Loeffler Bacilli Highly Magnified.

Toxic Albumins.—The toxic albumins produced by the diphtheria bacilli have been especially investigated by Roux and Yersin,[1] and Fraenkel and Brieger.[2] This toxic substance is of a proteid nature, precipitated by alcohol, soluble in water. Nearly pure, it is a white, amorphous mass of light specific gravity, and keeps its properties for a long time unchanged. Its extraordinary poisonous nature is shown by Roux and Yersin, in that four tenths of a milligramme of the substance, when inoculated, was sufficient to kill eight guinea pigs. If this poison be inoculated into a guinea-pig, it produces all the changes, except the pseudo-membrane, that the pure culture of the bacilli does. The long continuance of the toxic power of the poison in the body and its slow absorption from the locally infected tissues account for the deaths which occur some time after the entire disappearance of the bacilli from the infected throats.

The toxalbumin of diphtheria is very little, if at all, absorbed by intact mucous membranes, and can be swallowed by susceptible animals in large amounts, without danger.

Lesions.—In animals inoculated with the bacilli or these toxalbumins we find at the seat of inoculation a grayish focus surrounded by an area of congestion. The subcutaneous tissues for an extensive area around are congested and more or less œdematous. The adjacent lymph glands are swollen and the serous cavities usually contain an excess of clear or turbid fluid. The microscopical changes in the internal organs of animals dying of experimental diphtheria have been studied by Babes,[3] Welch[4] and Flexnor, and others.

In the liver there are found numerous smaller and larger masses of necrotic cells. These areas are permeated by leucocytes. Congestion with hemorrhages into the capsule and tissue are present. In the kidneys fatty changes occur in the epithelium of the tubes and glomeruli and a hyaline alteration of the glomerular capillaries and of the smaller arteries. In the spleen and lymph-glands the necrosis of cells is also present. Both the cell-bodies and nuclei of living cells are altered. The lungs show areas of intense congestion with hemorrhages into their tissue. The heart is nearly always the seat of fatty degeneration. The fibres of the voluntary muscles show degenerative changes. The number of leucocytes is greatly increased in the blood.

Experimental Immunity.—The exceedingly interesting results obtained by Fraenkel, Behring,[1] Brieger,[2] and others[3] in producing immunity in animals, gives the hope at least of practical results in the future. They found that the blood or serum of animals rendered immune against diphtheria had the power of rendering other animals, when injected into their bodies, also immune. In animals already infected the injections had the power of destroying or neutralizing the poison secreted by the bacilli. It was also found that the offspring of immune animals possessed a considerable degree of immunity. Their success in treating animals has been so great that the endeavor to cure human diphtheria is soon to be made.

Duration of Life in the Klebs-Loeffler Bacilli.—The life of the bacillus varies greatly according to the conditions under which it is placed. An agar tube-culture in the laboratory is still alive after seven months' growth, and a bit of membrane no larger than a pin's head still gives cultures of both the bacilli and the streptococci four months after its removal from the throat. Some have found bits of membrane kept in cloth to be still alive after six months. Probably in dark, damp, dirty places life remains even longer, while, on the other hand, under unfavorable conditions the bacilli may live only a few days.

The Conditions Necessary for the Infection of Man with the contagium of diphtheria are of great practical importance. Whether this can be implanted on the normal mucous membrane in man is still a question. Undoubtedly a lesion favors it. When the Klebs-Loeffler bacilli are implanted on the normal mucous membranes of susceptible animals they do not grow. The researches of Barbier[4] throw interesting light on this subject He found that a streptococcus which was associated with the Loeffler bacillus in all cases where marked redness and swelling were present, when implanted on the normal mucous membrane of the vagina in guinea-pigs, produced an acute purulent discharge, with redness and swelling. If with these cocci, or even four weeks later, the Loeffler bacilli were brought into contact with the mucous membrane, a severe diphtheritic inflammation was started which often caused death. If these results can be applied to man, they add a new importance to the discovery that streptococci are frequently present in slightly inflamed throats, and to their frequent association in the pseudo-membranes with the Loeffler bacilli.

Pseudo Diphtheria Bacillus.—The relation of this bacillus to that of true diphtheria is of much practical importance. Abbott[5] has recently given such an exhaustive review of this subject that it will only be necessary here to give a brief summary. The term is now used to define a group of bacilli which closely resemble the Loeffler, but which are without pathogenic properties in guinea-pigs. By some writers the term is used to cover varieties that show quite marked cultural and morphological differences.

It has been established that bacilli with all the characteristics of the Klebs-Loeffler, except their virulence, are to be found exceptionally where pseudo-membranes are absent. These are never numerous, only a few scattered colonies being found on plates or tubes. In some localities they are found rather frequently, in others rarely, or not at all. Roux and Yersin[6] found also that among those obtained from cases of diphtheria there were gra-

[1] Roux and Yersin: Annales de l'Institut Pasteur, iii., 1889, p. 273.
[2] Fraenkel and Brieger: Berlin. klin. Woch., December 3, 1890.
[3] Babes: Virch. Archiv., Bd. 119, S. 468.
[4] Welch and Flexnor: Bulletin of the Johns Hopkins Hospital, August, 1891, March, 1892.

[1] Behring and Wernicke: Zeit. Hygiene u. Infect. Krank., Bd. 12, H. 1, S. 10.
[2] Brieger, Kitasato, and Wasserman: Zeit. Hyg. u. Inn. Krank., Bd. xii, H. 1, No. 2.
[3] Ibid.
[4] Barbier: Arch. de Médecine Expér., 1891, p. 68.
[5] Abbott: Bulletin of the Johns Hopkins Hospital, October-November, 1891.
[6] Roux and Yersin: Annales de l'Inst. Past., 1889, p. 273.

dations in virulence from those whose inoculation caused death in guinea pigs in twenty-four hours to those which produced only local changes. They found that those taken from mild cases are, as a rule, the least virulent. Beck found in some cases of true diphtheria both virulent and non-virulent bacilli.

As the result of a large number of experiments, Roux and Yersin hold that the morphological and cultural differences between the diphtheria and the pseudo-diphtheria bacilli are inconstant, and, when present, are insufficient to establish that they belong to different species. In this country the pseudo-diphtheria bacilli have been infrequently found. Prudden, in a large number of cases in New York, did not find them once. Koplik has found them a few times, and Abbott in fifty-three cases in four. In these studies the pseudo-diphtheria bacilli were met with only once, as proved by animal experiments. This whole subject needs further study.

For bedside diagnosis all cases which give typical colonies of bacilli resembling the Klebs-Loeffler should be regarded as true diphtheria; both because of the length of time consumed in animal experiments and of the impossibility of being sure that because the colony from which the inoculating culture was made was not virulent all the colonies were the same. This merely compels a few doubtful cases of diphtheria to be still considered as such.

Pseudo-membranous Inflammations in which the Klebs-Loeffler Bacillus is Absent.—The presence of streptococci in the pseudo-membranes and in the blood of fatal cases of diphtheria has been known for many years. Loeffler,[1] in 1884, described a class of cases where loss of substance with a gray yellow or necrotic base was a characteristic feature in which the Klebs-Loeffler bacillus was absent, but a streptococcus very abundant. He concluded that in these cases the frequency of the presence of the streptococci either means that the poison of diphtheria has been at first present, and thus prepared the way for the streptococci, and then vanished before examination, or that the streptococci are the cause of this peculiar form of pseudo-membranous inflammation. He came to the conclusion that the first supposition was the true one, that the streptococci were secondary to the Klebs-Loeffler bacilli.

Colony Slightly Magnified.

Streptococcus Colony. Agar Plate.

This streptococcus he isolated in three cases from the tonsils and in two cases from the internal organs. Both the biological characters and the general effects upon inoculated animals seemed to indicate a close relationship with the streptococcus pyogenes and erysipelatus. The changes produced upon the mucous membrane by its inoculation did not resemble closely the characteristic local lesions of diphtheria. From that time until the present year it seemed to be the aim in Europe, especially in Germany, to seek out for examination only typical cases of epidemic infectious diphtheria. In these cases the Klebs-Loeffler bacilli were constantly found, and they came to be looked upon more and more as the only etiological cause of all extensive pseudo-membranous inflammations, at least when they were not complications of infectious diseases.

In 1889, Prudden[2] published the results of a very careful bacteriological investigation of twenty-four cases of fatal pseudo membranous inflammation of the tonsils, pharynx, and larynx, which were all considered clinically to be diphtheria. These cases were mostly young children in two asylums where they had been exposed to scarlet fever and measles, and in some of whom these diseases had existed as a complication. In not one of these were the Klebs-Loeffler bacilli found, but in all but two streptococci. These were present in most of the cases in enormous numbers, as shown by the cultures. In three cases in which the viscera were examined they were found to contain a moderate number of streptococci. In the ducts of the mucous glands and in the lymph-spaces of the submucosa, the streptococci were found in greater or smaller numbers, also rarely in the tracheal and bronchial glands. The staphylococcus pyogenes aureus and albus were present in varying numbers, but hardly more frequently than in many apparently normal throats.

In sixteen of the twenty four cases, broncho-pneumonia[1] was present, and cultures made from the fresh broncho-pneumonic areas in fifteen of these gave large numbers of streptococci. The streptococci obtained from all these cases presented the same morphological and biological characters. They appeared to be identical with the streptococcus pyogenes.

From his investigations Prudden concluded that in a certain class of cases pseudo-membranes were caused by streptococci. Kolisko and Paltauf, Wurz and Bourges,[2] Sevestre,[3] Tangl,[4] Baginsky,[5] and others have found streptococci but no Loeffler bacilli in the pseudo-membranous inflammations occurring early in scarlet fever. Baginsky,[5] in his recent studies, found that in one hundred and fifty-four cases clinically diagnosed as diphtheria, there were thirty-four in the pseudo-membranes of which no Loeffler bacilli were present. In two cases of membranous rhinitis he found the bacilli present. These ran the usual mild course.

Martin,[6] in Paris, has just published a clinical and bacteriological study of the croupous deposits of two hundred children suspected of diphtheria. He found in seventy-two no Klebs Loeffler bacilli; of these, twenty-nine were croup cases. The mortality of these was far less than in those having true diphtheria. Some of the children had been exposed to scarlet fever and measles. He is of the opinion that the certain clinical diagnosis of these cases is impossible. A few examples of infection with diphtheria in the wards are given. He regards the association of different bacteria with the Loeffler bacilli as greatly modifying the course of the disease. As he used only blood-serum tubes, he probably has often overlooked the almost invisible colonies of the streptococci. He also believes that from the form of the Klebs-Loeffler bacilli one can judge somewhat of their virulence.

Aim and Scope of these Investigations.—The object of these studies has been to determine by the bacteriological examination of a large number of cases whether, in fact, pseudo membranous inflammations can be divided into two distinct classes, and, if so, in what proportion of the cases the Klebs-Loeffler bacilli are present; also to go further and see if, by combining in all cases a very careful clinical examination with a bacteriological one, it would not be possible to find some constant differences between the local appearances and general symptoms of true diphtheria and those pertaining to other croupous inflammations.

The cases recorded in the following pages include all those having pseudo-membranous inflammations admitted to the wards of the Willard Parker Hospital during four consecutive months; also a number sent to me by sev-

[1] Loeffler: Mitth. a. d. Kais. Gesund., Bd. 2, 1884.
[2] Prudden: American Journal of the Medical Sciences, May, 1889.

[1] Prudden and Northrup: American Journal of the Medical Sciences, June, 1889.
[2] Wurz and Bourges: Archives de Medecine Experiment., May 1, 1890.
[3] Sevestre: Centralbl. f. Bakt., August 29, 1890, p. 301.
[4] Tangl: Centralbl. f. Bakt., July 8, 1891.
[5] Baginsky: Berlin. klin. Wochen., February 29, 1892.
[6] Martin: Annales de l'Inst. Pasteur, May, 1892.

eral physicians, and six cases of membranous rhinitis from the throat classes of the Vanderbilt Clinic and the Roosevelt Hospital.

In all, one hundred and fifty-nine were examined; these will be studied in the following classes: True diphtheria, those in which the Klebs-Loeffler bacilli are present alone or with other bacteria; pseudo-diphtheria, those in which the Klebs-Loeffler bacilli were never present, but some form of cocci, usually streptococci.

For comparison, the following were also examined bacteriologically: Follicular tonsillitis, 10; peritonsillar abscess, 5; acute pharyngitis, 5; chronic pharyngitis, 5; hyperæmic throats in scarlet fever, 10.

Technical Observations.—To obtain the material for examination two methods were employed. Where a piece of membrane could be removed without injuring the throat, this was done by means of a long, slender pair of forceps, carefully sterilized. For the cases in which this was impossible, a number of cotton plugs [1] had been prepared by wrapping small portions of absorbent cotton around the ends of slender sticks, one inch in length, which were then placed in a tube and sterilized by dry heat. Taking one of these in the forceps, it was rubbed gently, but rather firmly, against any visible pseudo-membrane; when none was present, the cotton was rubbed against the tonsils and pharynx. The bit of membrane or cotton plug was then gently drawn three or four times across the surface of a six per cent. glycerine-agar Petri plate, making equally distant lines of inoculation. Taken to the laboratory, here the bit of membrane or swab was drawn across a blood-serum tube and then rubbed in a few drops of sterilized water. With a sterilized platinum loop a drop of this turbid fluid was taken up and drawn across two or more solidified Loeffler's blood-serum tubes, and a second drop across a second agar plate. The tubes and plates were placed in the thermostat and kept at 37° C. for twenty-four hours. From the membrane, or swab, two cover-glass smears were prepared, stained with Loeffler's methyl blue solution, studied under the microscope, and the forms of bacteria seen recorded. On the following day the colonies of the Loeffler bacilli, when present, in every case had reached a size sufficient to be distinctly seen on both the blood-serum tubes and agar plates, and, under the microscope, showed their extremely characteristic appearance on the latter.

It is necessary to be extremely careful to have the glycerine-agar faintly alkaline, to have proper peptone, and to use only fresh, moist plates, otherwise there may result an entire failure to get any growth of the Loeffler bacilli.

In these investigations the special object in view was to discover in the cultures the presence, or absence, as well as the relative abundance of the Klebs-Loeffler bacilli, the streptococci, and the staphylococci. Any other forms of bacteria that appeared frequently or in large numbers were also investigated.

The Comparative Value as Culture-media of Blood-serum and Six-per-cent. Glycerine-Agar.—On the solidified blood-serum mixture suggested by Loeffler the Klebs-Loeffler bacilli grow more rapidly and surely than on any other of the usual solid media. The growth of the colonies, though fairly uniform, is not sufficiently characteristic to certainly identify them, for certain frequently present cocci grow with almost the same rapidity and appearance. The usefulness of the serum is limited to tubes, from its slight cloudiness and the great difficulty of making plates.

On glycerine-agar the growth of the bacilli is less rapid, but still vigorous when made from fresh bits of membrane or swabs. The gross appearance of the colonies is here also very similar to those of several forms of cocci. The appearance of the colonies under the microscope is, on the other hand, extremely characteristic and entirely different from those of any other bacteria occurring in the throat, with the possible exception of the pseudo-diphtheria bacilli. Glycerine-agar in tubes is much less useful than the serum, but in plates it has many great advantages, and if it were not that under certain conditions, when still capable of growing on the blood-serum, the Loeffler bacilli are unable to grow on the agar, the agar plates could entirely replace the serum tubes. This absence of growth on agar has occurred in two cases where frequent irrigation with 1 to 4,000 bichloride of mercury had been employed, also from two long-dried swabs.

In disinfection work, cultures would be obtained on blood serum when they no longer appeared on the agar. With these exceptions the plates always contained colonies of the Loeffler bacilli whenever the tubes contained them.

Throat cultures show the most characteristic growth under the microscope when the plates are examined after remaining from sixteen to twenty-four hours in the thermostat. The colonies of the different bacteria common to the throat have then attained a characteristic growth and are still for the most part distinctly separate. At this time, after some familiarity with the work, you can rapidly run over the plates, placed under the microscope, with a low power lens, and acquire a knowledge not only of how many varieties of organisms are present but also the relative proportion. The colonies can then be further studied by a higher power lens and under the microscope accurately fished.

For the photographs of six of the plate cultures, shown in the accompanying Plate, I have to thank my friend Dr. Edward Leaming. These give the usual appearance of the plates made from fresh membranes or swabs. At times the colonies are much closer together, at other times less so than in these. They show at a glance the actual and relative size of the colonies, and to some extent their appearance after twenty to thirty hours' growth at 37° C. It can be readily seen how thoroughly the isolated colonies can be investigated when the uncovered plate is put on the microscope-stand and each colony individually studied with any power lens desired.

Glycerine-agar plates in which the media has been tested are sufficient when the cultures are to be made immediately from throats in which frequent antiseptic irrigation has not been used. Whenever the bacilli may have been injured from antiseptics, drying, or any other cause, the blood-serum tubes should also be used to insure the growth of the Loeffler bacilli.

For the simple determination of the presence or absence of the Loeffler bacilli the blood-serum suffices. I believe that the failure to fully recognize that there are many extensive pseudo-membranes, neither due to the Loeffler bacillus nor occurring after scarlatina, is owing to the almost exclusive use of blood serum tubes, since in tubes it is impossible to satisfactorily use the microscope to identify the smaller colonies, and before they become visible to the eye they are often overgrown by the more rapidly growing bacteria.

When the colonies of the bacteria sought for were plainly isolated, tube cultures were immediately made from a characteristic colony; when not, a sowing was made on a fresh plate and isolated colonies obtained.

Animal Inoculations.—From the first or second generation of the Klebs-Loeffler bacilli, tubes of faintly alkaline nutrient bouillon were inoculated. The tubes were removed from the thermostat on the fourth day. Two-thirds of the clear bouillon was poured off and the remainder well shaken. One-third cubic centimetre of this fluid, turbid with the bacilli, was inoculated into the sub-

[1] In a number of trials, in which, from the same cases, plates were made both from bits of membrane and from the swabs, the latter proved as trustworthy as the former. For the use of physicians, who supplied me with cases from outside the hospital, I kept a number of strong glass tubes, two and one-half inches in length by one-half inch in thickness. Each tube contained an absorbent cotton swab, and was plugged with cotton. The tubes and their contents were then placed in the hot-air sterilizer. These could be carried in the pocket. After use at the bedside they were returned to the laboratory, where the plates and tubes were made.

cutaneous tissue of the side of the abdomen of a guinea-pig. Guinea-pigs were inoculated from cultures of twenty-two of the cases in which the Klebs-Loeffler bacilli were present. In nineteen death followed with typical pathological changes. In no case were the bacilli, or any other bacteria, obtained in the cultures made from the heart's blood, the liver, or spleen. In no case were any other pathogenic bacteria than the Klebs-Loeffler bacilli obtained from the cultures made from the œdematous fluid and congested tissue in the immediate neighborhood of the point of inoculation.

The temperature in the animals fell after inoculation in every case but one, in which a temporary rise occurred, and remained from one to three degrees below the normal until death.

The streptococci taken from four cases of true diphtheria and from four cases of pseudo-membranes in which the Loeffler bacilli were absent were inoculated in rabbits. The temperature of the rabbits rose after inoculation, in every case, from one to five degrees. In two local abscess and sloughing of tissue occurred. In three temporary swelling and redness and in three no reaction appeared. Four died between the fourth and fifth weeks. No streptococci were obtained from either the blood or viscera of the fatal cases.

Description of the Willard Parker Hospital.—This hospital is under the control of the New York City Board of Health and to it are sent diphtheria and scarlet-fever cases. The diphtheria wards, in which the majority of the cases here studied were treated, comprise three large, high rooms, connected by a hallway. Two are used for the women and children, and one for the men. As far as possible, the convalescent and doubtful cases are separated from those having true diphtheria; but owing to the frequently crowded condition of the wards, this often cannot be done. The floors are of hard wood, and are washed daily with 1 to 1,000 bichloride solution. The iron bedsteads are carbolized each morning. Where patients soil their beds, the sheets and spreads are changed daily; in other cases, weekly. All patients have their nostrils and throats syringed with a 1 to 4,000 bichloride solution, the bad cases every half hour, the convalescents three times a day. No swabbing of throats is allowed. All clothes brought to the hospital are disinfected, and are only returned when patients leave. Patients are also required to take a bath when they go (also, if possible, when they come), washing the hair with a 1 to 1,000 bichloride of mercury solution.

Cases of laryngeal dyspnœa when urgent, or when not relieved by vomiting and calomel fumigations, are intubated. The only routine constitutional treatment is to give alcoholic stimulants throughout the course of the disease to those showing any tendency to heart failure. Tube cases are fed lying on the lap with lowered head. These details are necessary to show the conditions under which the patients were placed, and to avoid a repetition of the account of the treatment in the clinical histories which follow. The wards for scarlet fever are on a different floor, and have the same arrangement of rooms.

Methods of Clinical Study.—I made daily rounds with Dr. Lester, the resident physician; each case was carefully observed, the appearance of the throat, and the complicating conditions of the larynx and nostrils were noted. As far as possible sketches were made, and the changes occurring from day to day noticed. The figures for pulse, temperature, and respiration were taken from the hospital charts—the temperature in children being always taken by the rectum, in adults by axilla. The urine analyses were also obtained from the hospital records. Cultures were made from every case on the day of admission, those which showed very numerous colonies of the Loeffler bacilli were not examined again for three days, and then every other day till the bacilli had twice proved absent. Cultures were made twice from cases of croupous tonsillitis. Those having croupous laryngitis were examined daily, until all doubt as to the presence or absence of the Loeffler bacilli was dispelled, swabs and bits of coughed-up membrane being used. The same care was taken in extensive pseudo-membranous inflammations, in which the Loeffler bacilli were absent. During the last six weeks some of the cases were subjected to only one thorough bacteriological examination.

True Diphtheria (Clinical histories and bacterial examinations of 27 illustrative cases from the 54 in which the Klebs-Loeffler bacilli were present).—The aim is to present in the histories only the most important points.

Case I. February 6th.—Molly F——, aged five; membranous laryngitis; intubation; death. Clinical history: Well nourished; admitted with marked laryngeal dyspnœa; slight adherent patches on tonsils; no pain on opening mouth; no swelling of glands of neck. Temperature, 101° F.; pulse, 118; respiration, 34. Vomiting and fumigations not relieving the dyspnœa, she was intubated.

February 9th.—Temperature has remained between 100 and 101° F.; pulse and respiration remain about the same. Patient is very languid, and has at times dyspnœa, which is relieved by calomel fumigations. Patches still remain on tonsils.

February 12th.—Tonsils clean. Condition unchanged.

February 18th.—Temperature normal. Tube removed.

March 2d.—Patient taken home; she is weak, can hardly stand, and cannot speak above a whisper. Since the tenth day considerable quantities of albumin have been present in the urine. Considerable emaciation.

March 11th.—Patient returned for laryngeal dyspnœa, apparently due to laryngeal paresis. She was intubated.

March 24th.—Tube removed. Patient is anæmic; muscles are somewhat atrophied; some albumin persists in urine. Remains in bed.

March 28th.—Is sitting up and gaining slightly in strength. Returned home. Died two weeks later at home, apparently from nephritis.

Bacterial examination: Cover-glass smear showed many fairly typical Loeffler bacilli. Plates and tubes showed almost a pure culture of vigorous growing colonies of the Klebs-Loeffler bacilli. A colony was replated, and from this new growth a bouillon tube was inoculated. A guinea-pig inoculated with ½ c.c. of bouillon culture died in forty-three hours with characteristic lesions. A pure culture of the Loeffler bacilli was obtained from the tissue at seat of inoculation, while the plates from the heart and organs were sterile.

Case II. February 29th.—Harry S— , aged two; intubation; membranous laryngitis; recovery. Clinical history: Admitted with marked laryngeal dyspnœa. Intubation gave complete relief. No membrane visible anywhere in throat. Very slight prostration. Temperature, 101° F.; pulse, 124; respiration, 32. On sixth day tube was coughed up. Except for the slight prostration there were no bad symptoms.

Bacterial examination: Plates and tubes made from a swab of the throat contained a number of typical colonies of the Klebs-Loeffler bacilli. Cultures made on following days gave none. Streptococci were always present. Guinea-pig died in forty-eight hours with characteristic lesions.

Case III. February 20th.—Sarah S——, aged four; intubation; death. Clinical history: The child had been intubated before admission; heart irregular and weak; a few grayish semi-adherent patches on tonsils. Temperature, 100.6° F.; pulse, 134; respiration, 42.

February 22d.—Breathing badly, swallows with difficulty. Died, 7.15 P.M.

Bacterial examination: Plates show many typical colonies of Loeffler bacilli, and many of streptococci.

Case IV. February 23d.—Benjamin J——, aged two

years and ten months; intubation; death; extensive membrane. Clinical history: Thick, greenish-gray, adherent pseudo-membrane on uvula, anterior faucial pillar and pharynx; croupy; glands of neck swollen. Temperature, 101° F.; pulse, 126; respiration, 38. Very restless.

February 26th.—Intubated, with relief of laryngeal dyspnœa.

February 27th.—Heart failure and death.

Bacterial examination: Plates revealed a great number of active growing colonies of the Loeffler bacilli, and some of streptococci. Guinea-pig inoculated died between forty-eight and sixty hours with characteristic changes.

Case V.—Private case, aged one; intubation; death; extensive membrane. Clinical history: Soft, grayish, pseudo-membranous patches on tonsils, base of uvula, and in nostrils. Temperature, 101° F.; pulse, 120. Membrane spread slowly over pharynx, and on fifth day invaded the larynx; dyspnœa gradually increased; tissues of neck became greatly swollen; intubated with but slight relief. Died on seventh day. Temperature never above 102° F.

Bacterial examination: Many colonies of the Loeffler bacilli and of streptococci.

History of infection: Three days before first symptoms child had been put in a crib for a few hours, occupied, two weeks before, by a child who had passed through a dangerous attack of diphtheria.

Case VI. February 28th.—Rachel M——, aged five. Death after disappearance of the membrane. Clinical history: Both tonsils, anterior pillars, left side of uvula, and soft palate covered by a thick, firmly adhesive, grayish pseudo membrane. Dirty discharge from nose. Temperature, 99° F.; pulse, 110; respiration, 24. Apathetic.

March 1st.—Croupy, relieved by calomel fumigation. Temperature, 99.5° F.

March 7th.—Thick membrane has separated. Superficial ulceration on faucial pillars and tonsils covered by thick purulent discharge. Since the third the urine has contained large amounts of albumin. Is very weak and apathetic Speaks in whispers and swallows with difficulty.

March 15th.—Copious discharge continued, and patient seems unable to swallow or spit it up. Patient suddenly began to breathe with feeble gasps and died at 7.30 A.M.

Bacterial examination: Cover-glass from smear gave an almost pure culture of typical Loeffler bacilli. Cultures gave a large number of colonies of the Loeffler bacilli, and a smaller number of colonies of micrococci which appeared as diplococci and in rows of two to eight. After the disappearance of the membrane no more Loeffler bacilli were present, the micrococci above noticed and many other forms replacing them.

Guinea-pig died in forty-eight hours with characteristic lesions.

Cases 7 to 10 in one family. Malignant diphtheria.

Case VII. March 6th.—Cora B——, aged twenty-six, the mother; died. Clinical history: Has been sick five days. Uvula, posterior fauces, tonsils and pharynx greatly swollen and covered by a very thick, yellow-gray membrane, nostrils occluded by membrane. Lymph-glands hard, slightly swollen. Temperature 100.8° F.; pulse, 106 and feeble; respiration, 26. Is apathetic, can hardly swallow or whisper. Feels that she is choking.

March 8th.—No improvement. Nasal passages obstructed by thick membrane; sweetish, offensive odor. Can hardly swallow or spit up the copious discharge. Patient grew worse on the 10th. Pulse became imperceptible and death occurred at 4 P.M.

Case VIII. March 6th—Maud B——, aged five, daughter of last; death after disappearance of membrane. Clinical history: Sick for three days. At base of uvula and on tonsils are large patches of thick, yellowish-gray pseudo-membrane. Nasal passages occluded by thick, fibrinous membrane. Same odor as from mother. Slightly croupy. Patient seemed at first to do well. The membrane gradually separated, and on the 11th the throat was clear of membrane. Some ulceration on fauces. On the 14th began to vomit food. This continued on 15th. Heart became weak and patient died at 10 P.M.

Case IX.—Clifford B——, aged one, son of Cora B——; died. Clinical history: Sick three days. Pharynx, tonsils, and cavities of nose lined by a thick, offensive, adherent pseudo-membrane. Croupy. Patient is cyanotic and septic, and very restless. Died at 1.10 P. M.

Case X.—George B——, aged thirty; father. Clinical history: Has had for one day sore throat, pains in limbs, and prostration. Whole right tonsil is covered by a thick, soft, grayish smear, which can easily be removed, leaving adherent follicular deposits. Slight adherent patch on right anterior faucial pillar.

March 8th.—Merely follicular deposits on tonsil and slight membrane on anterior pillar.

March 14th.—Throat clean, except small patch on right anterior pillar.

March 17th.—Throat clean. Feels well.

Bacterial examination: All four cases gave such typical smears on cover-glasses of the Loeffler bacilli that an almost certain bacteriological diagnosis could be immediately made of true diphtheria. Besides the Loeffler bacilli, all had many colonies of a streptococcus which grew rapidly without forming looped colonies. In hanging drop it grew in short chains and as diplococci. The plates showed colonies of numerous other varieties of cocci and bacilli.

Guinea pigs were inoculated from cultures of eight and ten. The animals died in seventy-two and twenty-four hours with characteristic changes.

The history of the spread of the contagion in these cases is interesting. Two months before, a child living on the floor below them had what the doctor called diphtheria. Until a few days before the sickness of Cora B——, the two families had kept apart. For the last few days they had visited each other, and Cora had carried and played with the child who had recovered from the diphtheria. When the mother took sick she was still allowed to nurse and carry the children. Three days later, the children were discovered to have contracted the disease. The mother, too sick longer to nurse the children, confided their care to the father, who himself became infected. Antiseptic cleansing of the nostrils and throat was neither used in treatment nor prophylaxis in these cases, before their admission to the hospital.

Case XI. February 23d.—Charles B——, aged thirty; recovery. Clinical history: Both tonsils, faucial pillars, and base of uvula are covered by a firmly adherent, thick pseudo-membrane of grayish color. Diffuse infiltration of adjacent tissues of neck.

February 24th.—Membrane has extended forward over palate.

February 27th.—Membrane separating in large pieces.

February 29th.—Clean, except for superficial ulceration of mucous membrane of soft palate.

On first two days temperature was about 101° F., after that below 100° F. On the tenth day albumin appeared in the urine.

Bacterial examination: Cultures made from bits of membrane showed many colonies of the Loeffler bacilli, until the 29th, when they ceased to appear. There were always many colonies of the streptococcus present.

Case XII. February 25th.—Gustav V——, aged twenty-one. Recovery. Clinical history: Thick adherent patches of pseudo-membrane on tonsils and lateral walls of pharynx. Membrane began to peel off on the 27th, and had all disappeared on the 29th. After the first day the temperature was normal. Most abundant colonies are of the Loeffler bacilli; some colonies of streptococci present. After the 29th no more Loeffler bacilli present.

Guinea-pig inoculated died in seventy hours, with usual conditions.

Case XIII. February 16th.—Mary C——, aged twenty; malignant; death. Clinical history: Has been sick two days before admission. Tissues of pharynx and palate swollen and œdematous. Whole of uvula, tonsils, part of soft palate, and part of pharynx covered by a thick, adherent, dirty gray pseudo-membrane. Much swelling of tissues of neck. The breath has a foul, sweetish odor. Patient is much depressed. Temperature, 98° F.; pulse, 100; respiration, 28. The pharynx, tonsils, and soft palate became one swollen mass covered by sloughing membrane. Swallowing difficult. For the last two nights patient was delirious and restless.

February 20th.—Pulse became rapidly weaker, and death occurred. Bacterial examination: Plates showed many varieties of bacteria, of which the Loeffler colonies comprised about one-third. Streptococci, micrococci, and bacilli were present.

Case XIV. March 24th.—Polly K——, aged thirty; malignant; recovered. Clinical history: Sick two days. Pharynx, tonsils, and soft palate swollen and œdematous. Tonsils, faucial pillars, and part of soft palate covered by a rotten, grayish-green, adherent pseudo-membrane. Great prostration. Temperature, 101.4° F.; pulse, 100; respiration, 20.

March 25th.—Condition unchanged. Temperature, 99.4° F.

March 29th.—Membrane nearly disappeared. Condition improved. Three children of this patient died. Bacterial examination: Many colonies of the Loeffler bacilli, many of the streptococci and others.

Case XV.—Child, aged six weeks; death; private practice. Clinical history: On first day small adherent patch on left tonsil and on base of uvula, also a piece of membrane hanging down from naso-pharynx, membrane spread over pharynx, and on third day into larynx. Child died on the fifth day. Glands were never swollen, and temperature did not rise above 99° F. until a few hours before death. The day before the illness of the child was noticed the mother was discovered to have diphtheria, and the child immediately removed, but too late. The mother went through a severe illness, also without fever, but recovered. Bacterial examination: An almost pure culture of Loeffler colonies on plates. No streptococci.

Animal inoculation: Guinea-pig died in fifty hours, with fairly characteristic lesions.

Case XVI.—Child, aged two; recovery. Clinical history: Adherent gray patches, first on tonsils, then on pharynx and roof of soft palate. On seventh day spread to larynx and caused great dyspnœa. Calomel fumigations given every hour. Child never seemed very ill, except for the dyspnœa. Temperature never above 100° F. Glands not swollen.

Bacterial examination: The majority of the colonies were those of the Loeffler bacilli. Numerous colonies of micrococci were also present. No streptococci found.

Case XVII. February 13th.—Child, aged six; private practice; recovered. Clinical history: When first seen tonsils were swollen. Next day adherent patches seen on tonsils. Tonsils became clean five days later. Some days afterward child was noticed to limp, and slight paresis of muscles of left side was found. In the next house, the week before, there was a case of clinical diphtheria, and this child played with the children from the other house.

Bacterial examination: Many colonies of Loefiler bacilli and many scattering forms.

Case XVIII. April 25th.—Minnie M——, aged twelve. Abscess tonsil; diphtheria. Comes from an asylum from which three others with diphtheria have been received. Has complained of sore throat for two days. Both tonsils and left peritonsillar region swollen and hyperæmic. Adherent patches on left tonsil, follicular deposits on right. Temperature, 102° F.; pulse, 90; respiration, 24. Abscess in left tonsil ruptured and discharged a large amount of pus at the moment of examination. Recovered entirely by fourth day. Cultures gave numerous colonies of the Klebs Loeffler bacilli and of long-chained streptococci.

Guinea-pig inoculated died in forty-four hours, with characteristic lesions. Plates and tubes from tissue at point of inoculation gave abundant colonies.

Case XIX. February, 1892.—Child, aged six weeks; private practice; death. Clinical history: Began with bloody discharge and membrane in nose. Membrane spread to pharynx, tonsils, and larynx. Death about the tenth day. Father of child had been attending diphtheria cases.

Bacterial examination: Cultures from a piece of membrane gave abundant colonies of the Loeffler bacilli and of the long-chained streptococcus. A piece of membrane taken three days later from the nose gave very numerous colonies of the staphylococcus pyogenes aureus. Guinea-pig died in forty-eight hours, with characteristic lesions, after inoculation with the bacilli.

Case XX. February 13th.—Henry K——, aged sixteen. Clinical history: For one week a room-mate had been sick with diphtheria, swabs from whose throat gave an almost pure culture of the Klebs Loeffler bacilli. On first day of his illness both tonsils and adjacent borders of pillars were covered by a thick, soft, dirty pseudo-membrane. The pharynx and fauces were swollen and deeply injected. Temperature, 103 F.; pulse, 120. Glands swollen.

February 14th.—The tonsils still swollen and painful, but the diffuse membrane disappeared, leaving only croupous patches confined to the tonsils.

February 17th.—Small follicular deposits still remain.

February 18th.—Tonsils clean, though still swollen.

There was never any albumin in urine. Temperature and pulse sank to normal on the second day.

Bacterial examination: Very numerous colonies of the Loeffler bacilli, some streptococci.

Case XXI. March 23d.—Cornelius V——, aged seven. Clinical history: Tonsils, anterior faucial pillars, and roof of soft palate covered by a thick, grayish-white, adherent membrane. Temperature, 101° F.; pulse, 120. Marked swelling in adjacent tissues of neck. Considerable prostration.

March 27th.—Membrane peeling off. Glands of neck less swollen. Temperature, 100° F.; pulse, 130. Prostration still marked.

March 29th.—Expelled a large piece of membrane from nose.

April 1st.—Throat clear. Temperature, 98.6° F.; pulse, 130. Made a slow recovery.

Bacterial examination: Very abundant colonies of Loeffler bacilli and many streptococci.

Case XXII. March 23d.—John V——, aged five, brother of previous case. Clinical history: Slight adherent patch on left tonsils. Hardly complains at all. Temperature, 100° F.

March 25th.—Patch smaller.

March 27th.—Throat clean. Feels well.

Bacterial examination: Cover-glasses show many typical Loeffler bacilli, of chain cocci and diplococci. The cultures from both cases contained many colonies of the Loeffler bacilli, streptococci, and micrococci.

The previous week the oldest sister had croupous inflammation of the tonsils and soft palate. The children were not isolated. The second child had absolutely no symptoms. Treatment with spray and douche of 1 to 4,000 bichloride solution was begun probably a few hours after infection.

Case XXIII. February 17th.—Gussie G——, aged three and a half; diphtheritic rhinitis; recovery. Clinical history: Slight deposits on left tonsil. Obstruction to nasal breathing and dirty discharge from the nose.

February 21st.—Small adherent patches still on tonsils. Glands on left side of neck swollen and painful.

February 23d.—To day a large, thick, fibrinous pseudo-membrane, four inches in length, was washed from the

nose. It was a partial cast of both nostrils. Patient doing well. Tonsils almost clean.

On the 25th scarlet fever developed, from which she finally recovered. Temperature never rose over 101° F. until the development of the scarlet fever.

Bacterial examination: From the pharynx the culture showed many typical colonies of the Klebs-Loeffler bacilli. From the membrane from the nose only a very few colonies were obtained, among which were a few of the Krebs-Loeffler bacilli and a few of the streptococci.

Membranous Rhinitis.—Case I.—January 19, 1892. Roosevelt Dispensary. Service Dr. Jonathan Wright. Aged three. Recovery. Clinical history: Right nostril occluded by a thick succulent membrane. Left shows in front small adherent deposits. Upper lip eczematous with a few pustules. Bloody secretion from nose. Pharynx and larynx free. Temperature by rectum, 100° F.; pulse, rapid. Removal of a piece of membrane caused considerable bleeding. Patient never seemed really ill. On the fifth day the nostrils were free from membrane. Still considerable discharge and swelling. No albumin in urine.

Bacterial examination: Cover glass preparations from membrane showed cocci, diplococci, and bacilli, among which were some fairly typical Loeffler bacilli. Cultures contained numerous colonies of Loeffler bacilli and of the long-chained streptococci and of a few other micrococci.

Guinea-pig inoculated with 1 to 2 c.c. of bouillon culture, second generation, of the Loeffler bacilli, died on the fifth day, with characteristic lesions. A rabbit was inoculated in the ear with 1 to 2 c.c. of a bouillon culture, two days old, of the streptococci. On the second day rabbit's temperature was 102° F.; the ear about inoculation somewhat reddened. On third day temperature 103° F., considerable redness and œdema of the whole central half of ear was present. The temperature and local signs of inflammation then subsided.

Case II.—Gertrude B——, aged four. Discharge and occluded nostrils for six days; peevish; anæmic. Both nostrils filled in front by a thick, succulent, adherent, light-gray membrane. Free hemorrhage on removal. Pharynx clear of deposit. Temperature, pulse, and respiration nearly normal. Urine, 1.007, clear, no albumin or casts. On sixth day membrane separated.

Case III.—Tom Mc——, aged four and a half. Vanderbilt Clinic, service Dr Simpson. Discharge and occluded nostrils one week. Both nostrils filled by thin, grayish-white, adherent pseudo-membrane. Temperature, 100° F.; pulse, 130. Urine, 1.010, clear; no albumin or casts. Nostrils clear sixth day.

Case IV.—Ellen B——, aged eighteen months. Roosevelt Dispensary. For six weeks has had an otitis media. For one week discharge from nose. On septum and turbinated bones thin, grayish-white, adherent membrane. Child seems well. Membrane all disappeared on fifth day.

Case V.—E. W——, aged five. Same history as previous cases. Membrane separated sixth day. Never appeared sick.

Case VI.—Mary B——, aged three. Membrane separated sixth day. Never appeared seriously ill.

In all the latter five cases of membranous rhinitis quite numerous colonies of the Klebs-Loeffler bacilli were present, in three associated with streptococci, and in two with staphylococci. From the first four, guinea-pigs were inoculated. One died on the fifth day and one on the seventh. The other two appeared sick for a few days and then recovered. In the neighborhood of the inoculation some induration could be felt. The slight virulence of the bacilli is remarkable.

These cases are very interesting. Like those observed by all other observers they ran a benign course. The only precaution to prevent the spreading of the contagion was antiseptic irrigation. No history of infection was obtained in any. In all six cases the colonies of the Loeffler bacilli grew rather feebly, both on the blood-serum and on the agar. The bacilli from the agar were small and often pointed, from the blood-serum and broth long and slender, with swollen ends. The cultures died out more quickly than those from ordinary cases. The bacilli in the membrane were rather long and slender, with few clubbed forms.

Cases of Laryngeal Diphtheria Requiring Intubation.

Number.	Name.	Age.	Lesion.	Temperature, pulse, and respiration on admission.		Result.
1	Lizzie D...	16 mos.	Croupous laryngitis.	Temp., 102; pulse, 130; resp., 40.	Intubated 3d day; died 4th day.	Died.
2	Maggie D..	4 yrs.	Croupous laryngitis; slight patches tonsils.	Temperature, 101.6; pulse, 118; resp., 28.	Intubated before admission.	Died.
3	Margt. G..	1 yr.	Croupous laryngitis; tonsils and uvula.	Temp., 101; pulse, 150; resp., 56.	Intubated 4th day; died 6th day.	Died.
4	Lena G....	4½ yrs.	Croupous laryngitis; slight patches tonsils.	Temp., 102; pulse, 140; resp., 42.	Intubated 4th day; died 6th day	Died.
5	Abram A...	2½ yrs.	Croupous laryngitis; tonsils. Pneumonia?	Temp., 104; pulse, 136; resp., 46.	Intubated before admission; died next day.	Died.
6	Ike S.....	18 mos.	Croupous laryngitis; bronchitis.	Temp., 100; pulse, 132; resp., 30.	Intubated on admission.	Recovered.
7	Cbarles H..	.....	Croupous laryngitis; scarlet fever.	Temp., 103.	Intubated on admission.	Recovered.
8	Female	4 yrs.	Croupous laryngitis; measles.	.....	Intubated	Recovered.
9	Female	5 yrs.	Croupous laryngitis; tonsils and pharynx.	.....	Intubated	Died.
10	.....	5 yrs.	Croupous laryngitis; slight patches tonsils.	.....	Intubated	Died.
11	.....	2 yrs.	Croupous laryngitis.	Reported in histories of Cases No. 1–5.	Intubated	Recovered.
12	.....	4 yrs.	Croupous laryngitis.		Intubated	Died.
13	.....	2½ yrs.	Croupous laryngitis; pharynx and tonsils.		Intubated	Died.
14	.....	1 yr.	Croupous laryngitis; pharynx and nostrils.	.....	Intubated	Died.

Whole number of cases requiring intubation, 14, of which 10 died and 4 recovered. Ages varied between one and five years. In Case 8 the bacilli grew and appeared like those in the membranous rhinitis cases. In 6 of these no membrane was visible anywhere above the larynx. In 1 scarlet fever, and in 1 measles existed as a complication.

Table of Diphtheria Cases not Included in the List of Cases of Membranous Rhinitis and Laryngitis.

Number.	Sex.	Age.	Location of Pseudo-membrane. Tonsils.	Palate.	Nose and pharynx.	Larynx.	Duration.	Result.
							Days.	
1	F.	6 years.	Follicular deposits.	1	.....	..	6	Recovered.
2	M.	4 years.	Patches.....	..	.....	..	....	Recovered.
3	F.	6 years.	Patches.....	1	1	..	4	Died.
4	F.	12 years.	Patches.....	..	.....	..	4	Recovered.
5	F.	10 years.	Follicular ..	1	.....	..	4	Recovered.
6	F.	4 years.	Patches.....	1	.....	..	5	Died.
7	M.	4 years.	Patches.....	1	.....	..	4	Died.
8	F.	8 years.	Patches.....	1	.....	..	4	Recovered.
9	F.	6 years.	Patches.....	1	1	..	5	Died.
10	F.	15 years.	Patches.....	1	.....	..	6	Recovered.
11	F.	16 years.	Patches.....	1	1	..	5	Died.
12	M.	21 years.	Patches	1	.....	..	4	Recovered.
13	F.	4 years.	Deposits	1	.....	..	6	Recovered.
14	F.	6 years.	Follicular	..	.....	..	5	Recovered.
15	F.	30 years.	Patches.....	1	.....	..	8	Recovered.
16	F.	4 years.	Follicular	1	1	1	8	Died.
17	....	5 years.	Extensive	1	1	1	15	Died.
18	....	26 years.	Extensive....	1	1	..	7	Died.
19	....	5 years.	Extensive....	1	1	1	9	Died.
20	....	1 year.	Extensive....	1	1	1	4	Died.
21	....	30 years.	Extensive....	1	.....	..	10	Recovered.
22	....	30 years.	Extensive....	..	.....	..	6	Recovered.
23	....	21 years.	Extensive....	1	.....	..	4	Recovered.
24	....	20 years.	Extensive....	1	1	..	6	Died.
25	....	30 years.	Extensive....	1	Pharynx.....	..	7	Recovered.
26	....	6 weeks.	Slight.....	1	Naso-pharynx..	1	5	Died.
27	....	2 years.	Slight.....	..	.....	..	....	Recovered.
28	....	6 years.	Slight.....	1	.....	..	....	Recovered.
29	....	5 years.	Slight.....	..	.....	..	....	Recovered.
30	....	6 weeks.	Extensive....	1	1	..	....	Died.
31	....	16 years.	Extensive....	1	.....	..	....	Died.
32	....	7 years.	Extensive....	1	Naso-pharynx..	..	...	Recovered.
33	....	5 years.	Slight.....	..	.....	..	..	Recovered.
34	....	5 months.	Slight.....	..	Naso-pharynx..	1	....	Died.

Résumé of Points of Interest in the Fifty-four Cases of True Diphtheria. (The reliability of cultures and of the immediate diagnosis from cover glass smears.)—In every case in which cultures revealed the Loeffler bacilli during any part of the disease the first examination disclosed numerous colonies. This would seem to show that cultures made from a fresh swab, or bit of membrane, can be thoroughly relied upon to show the presence or absence of the Loeffler bacilli as soon as the pseudo-membrane is developed. After the complete separation of the membrane they were in every case missed. In many cases an examination of cover-glass smears, when made from fresh swabs or membrane, gives an immediate reliable diagnosis. This requires great care and should always be controlled by cultures. Swabs from the pharynx of cases, in which no membrane was visible, also give knowledge of the bacteria infecting the larynx.

Methods of Spreading the Contagion.—Cultures made from the dried stains on spreads, pillow-cases, and sheets, where soiled by the expectoration of diphtheria patients, showed, in every case, at least a few colonies of the Loeffler bacilli. (See Photograph 4.)

We know by actual experiment that, under favorable conditions, when mixed with shreds of tissue and mucus, they live for many weeks. The sputum of patients, though apparently not containing any bits of membrane, is yet usually crowded with them.

More than one-third of the cases gave a clear history of having been brought in contact with the persons or clothes of those suffering from, or having recently had, severe pseudo membranous inflammations, diagnosed as diphtheria; and in eight the diagnosis had been verified by finding the Loeffler bacilli.

Case V. brings out strongly the manner in which diphtheria breaks out in unexpected places. The child, aged five, is taken out of town and left to sleep in an infected bed for a few hours, and dies ten days later. In another, a child is sent away for safety, but carries with him his infected clothes, and some of his playmates take the disease and die, while he himself escapes.

In another, five weeks before there existed diphtheria in the flat below. The first new patient taken sick was a child, aged two and a half years, three days later another, aged four, and then the mother herself. The children died, the mother went to the hospital and finally recovered. When she left home, her seven months' baby went to a friend's, where, three days later, two of the children developed diphtheria, and then finally the baby itself. The baby came to the hospital and died, one of the other children died.

Cases VII. to X. show the methods of transmitting the disease from one to the other. The sick mother carries the children and infects them. The father cares for them and is himself infected.

Physicians certainly are not careful enough to avoid carrying infection in their clothing, and to make sure that those whom they send from an infected house do not take it with them. In several of those in which the history of infection was investigated, great carelessness on the physician's part, in regard to warning those about the sick, was shown. The large number of cases of diphtheria which occur in the families of physicians should lead them to realize the danger of their carrying infection to others.

The practice, in hospitals for contagious diseases, of wearing gowns when examining patients, should be partially adopted by practitioners. The frequent crowded condition of the diphtheria wards in the hospital forces the placing in the same room, and often in adjacent beds, those having true diphtheria and those not having it.

At first it would seem that the contagion must be carried from one to the other, but, as far as the Resident Physician knows, this has not taken place in the last two years, and it certainly never occurred during these investigations.

The great attention paid to cleanliness in the wards and the sterilization of instruments of examination account partly for this, but the routine cleansing of the nostrils and throats of all patients with a weak bichloride of mercury solution has also an important share in giving this freedom from infection. The important fact is that it seems possible to almost entirely prevent the spread of diphtheria if proper precautions are taken.

Age.—Of the 54 cases, 43 were under 10 years; 2 were under 8 weeks; 11 were adults.

Mortality.—Twenty-five died out of the 54; 4 deaths occurred in the 11 adults; 10 of the 14 cases requiring intubation died.

Effect of Treatment.—The patients that died in the hospital were, without exception, those that on admission had either very extensive membrane or laryngeal complications. In only three was there any extension of the disease after irrigation with 1 to 4,000 bichloride solution had been commenced. In a number of families where different members had had the disease for different lengths of time, those longest sick without treatment did badly, while those just attacked did very well. In these cases the virulence of the bacilli and the family predisposition were the same in both the early and later cases, so that the great difference in the course of the disease in the two classes was probably the effects of the treatment.

Location of Pseudo-membrane.—Of the 54 cases, in 6 the disease was confined to the nostrils, in 5 to the larynx and bronchi. In all others the tonsils were more or less involved. In bad cases the soft palate and uvula were extensively invaded. In the adults, the pseudo-membrane was generally thick, usually extensive, and of a dirty grayish color. In bad cases, the membrane became very thick and offensive. In some of the children the membrane presented the same appearance as in adults, while in others it was thin and grayish white, often simply in the form of little patches on the tonsils, uvula, soft palate, or faucial pillars.

Two cases with true diphtheria from an asylum, one appearing like a follicular tonsilitis and the other with an abscess of the tonsil, bring out the difficulty in making a clinical diagnosis. In most of the mild cases in children this was impossible.

The severity of the disease seems to be almost directly in proportion to the extent of the membrane. The difference in cases is very striking. Those of croupous rhinitis, and many in which the disease is confined chiefly to the tonsils and uvula, both children and adults, hardly seem ill at all. Others with throat and nose lined with membrane are very seriously ill from the beginning and usually die

The cause of the great difference in these cases is a very interesting study. It is certainly true that malignant cases usually propagate malignant ones, and mild cases mild ones. It is also true that now and then a severe case has received its infection from a mild one, and more frequently still, mild cases have come from severe ones.

The most plausible explanation seems to be that there is a great difference in the virulence of bacilli from different cases, and also that the degree of susceptibility of individuals varies greatly. Some seem almost to be immune. Whether the greater proportion of children infected is due to their greater susceptibility, or to the fact that they are so apt to put things in their mouths, and that, when carried, their faces are brought directly against that portion of the clothing most likely to be infected, is an interesting question.

In the limited number of cases here examined the effect of the association of other organisms cannot be safely judged. The opinion has been forced strongly upon me that the Loeffler bacillus is the predominating factor. Some of those having given pure cultures of the Loeffler bacilli have been fatal, while others in which streptococci abounded have been very mild. In malignant cases with sloughing membrane the surface is crowded with micrococci and bacilli, but the probability is that they find the dead tissue a good soil for their growth. In

small children the association of the streptococci probably adds to the danger of a complicating broncho-pneumonia.

The temperature has been looked upon as a test by some. It is the general experience of those who have inoculated animals with Loeffler bacilli that the temperature falls soon after, and remains subnormal till death. On the other hand, inoculations of streptococci, when they produce any effect, raise the temperature.

In those cases of diphtheria in which the bacilli alone were present the temperature never rose above 100 F. In those in which the streptococci were abundant some had a high temperature, others a low. For prognosis the temperature was of no value except in children where lung complications occurred.

The marked swelling of the cervical glands and tissues was present only in those cases where other bacteria, especially streptococci were present. In many fatal cases there was no swelling, while some in whom it was marked recovered. In the bad cases, albumin in large amounts usually appeared in the urine. In many mild cases, no albumin was ever found. The deaths occurring some days after all membrane had disappeared from the throat bring out a peculiar danger in diphtheria.

The six cases of membranous rhinitis are of great interest, for it is only very recently that they have been thought to have any relation to true diphtheria. They seem regularly to recover.

[For a detailed description of the plate see end of article in next week's issue.]

(To be continued.)

A NEW OPERATION FOR THE SPEEDY RIPENING OF IMMATURE CATARACTS.[1]

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In the issue of the *Journal of the American Medical Association* for the first week in December, 1887, there appeared a paper by me on artificial ripening of cataract. I called attention to a method devised for that purpose. I have since then constantly employed this procedure with satisfactory results. Since the subject has attracted the attention of specialists principally, and has not been brought to the notice of the medical public in general, I may be pardoned if I give a brief outline of the reasons which led to, and the short history of, artificial ripening of the cataractous lens. A rule laid down by operators, and observed up to within a few years ago, was not to extract an opaque lens until it was perfectly ripe, and it was only then considered ripe when nucleus and cortex had undergone degeneration.

This state is made manifest by the absence of an iris shadow and by ocular inspection of the cortical layers under oblique illumination.

The crude way of determining maturity of the cataract consists in placing the patient with his back to the light and calling upon him to count fingers (qualitative perception of light) placed within one foot of him. If he is unable to answer correctly and can only determine the direction of the moving hand (quantitative perception of light), the cataract is considered ripe and ready for operation.

Since the introduction of irrigation by Wikeriewicz, Panas, and others, whereby the anterior chamber is washed out with a non irritant solution, the above rule has no longer been adhered to. Many non-mature cataracts are now operated upon and the transparent cortical substance, it is claimed, removed by the flushing method.

I will state right here that I have never employed this method, deeming it wiser, and surely safer, either to await the ripening of the cataract or to hasten its maturity by trituration. Senile cataract ordinarily makes its appearance after the age of fifty.[2] Its rate of progress is extremely variable, requiring sometimes months, more often years. During this period, especially after sclerosis has involved a greater portion of the lens volume, the afflicted individuals are in a helpless condition, cut off from the enjoyment of life, and, what is of far greater importance, forced to resign profitable and life-supporting occupations. At present I have under observation a gentleman where the development of the cataract on one eye has remained stationary for four years. The other lens shows some opaque lines at the equator and a decided blur in the nucleus, which impairs vision very materially.

Various methods have been devised for hastening this condition of slow development. It has been noticed that an iridectomy[1] accelerates the process of total sclerosis; puncturing of the lens with a needle has also been employed, as well as evacuation of the aqueous humor by paracentesis. None of these methods withstood the attack of critical investigations, and it was left to Professor Förster, of Breslau,[2] to devise a method which is extensively employed, and has received favorable notice from a great number of oculists in all parts of the world.

As the action of my procedure is based upon his, the execution only being different, it will be well to enter more fully into an account of his innovation, and for that reason I will quote a few sentences from my former publication[3] relating to Förster's method: "The procedure consists in gently rubbing the cornea, after doing an iridectomy, with the blunt end of an instrument, usually a strabismus hook or iridectomy forceps. The pressure exerted upon the cornea is transmitted to the lens, loosening and splitting the still adherent and semi-opaque cortical fibres. These, in the course of days and weeks, become perfectly opaque." "So long as the cataract is not mature, an operation is contra-indicated. So long as the cortical substance is still firmly adherent to the capsule, extraction of the lens cannot be performed with perfect safety to the patient, for, as Förster correctly states, the remaining layers of cortical substance will imbibe aqueous humor, swell, and give rise to iritis, and other dangerous complications."

Förster warns against rubbing the cornea too violently and squeezing the iris to avoid dislocation of the lens and iritis. He furthermore advises that pressure be made only in the pupillary area and within the limits of the iris coloboma. These very restrictions constitute what I will now consider under the head of objections to the indirect method of trituration.

Objections.—Escape of the aqueous humor after doing an iridectomy is followed by contraction of the pupil. If previously dilated with atropine the contraction is less, consequently the area of lens surface exposed for trituration is limited. Furthermore, the iris intervening between the cornea and lens is subjected to a constant pressure whenever the cornea is triturated hard enough to transmit the force to the lens. The iris fibres, besides being squeezed, are also contracted and relaxed, giving rise to a constant mechanical irritation which may result in an iritis. I had a similar experience in one of my earlier cases which greatly dampened my enthusiasm.

Jacobson,[4] MacHardy,[5] Hasket Derby,[6] Bull, and others

[1] Read before the Chicago Medical Society, March 21, 1892.

[2] Becker: Graefe-Saemisch Augenheilkunde, p. 225.

[1] Becker (Graefe-Saemisch, vol. v., p. 311) refers to a verbal communication made by Snellen, to the effect that iridectomy hastens development of cataract.

[2] Knapp's Arch. of Ophth., vol. xi., p. 344.

[3] Artificial Ripening of Cataract, by Boerne Bettman, Journal of the American Medical Association, December 3, 1887.

[4] A. f. Ophth., 30, 11 S., 266

[5] Transactions of the Ophthalmological Society of the United Kingdom, vol. vi., p. 317. At the June meeting, 1890, of the Ophthalmological Society of the United Kingdom, Dr. Snell read a paper upon "Trituration of Cataracts," according to Förster's method. During the discussion which followed, Dr. Hill Griffith (Manchester) stated that he had matured the lens twenty-eight times by the direct method, namely, with a silver spoon, introduced through the corneo-scleral wound into the anterior chamber. Of the 24 cases, no result was obtained in 13; in one, partial dislocation lentis followed, the only mishap he experienced; in 11 maturation was rapidly effected; slight loss of vitreous occurred after one extraction. Good vision was procured in all. He does not refer, however, to my investigations, which were published in 1887.

[6] Reference Handbook of the Medical Sciences, vol. i., p. 800.

call attention to this danger; Jacobson noticed also inflammatory thickening of the anterior lens capsule as a result of indirect trituration.

It must also be remembered that the cornea, as well as the lens is being triturated, which may give rise to epithelial opacity. This danger is greatly obviated by dipping the instrument employed in water or vaseline, and making gentle to-and-fro motions. These various objections induced me to seek a safer method of operation, one which could be just as readily performed and free from the risks which Förster's entails. I therefore practised, as early as 1885, the intraocular method of massage, which, to distinguish it from Förster's, I have called direct trituration.

My method of operating is as follows: After doing an iridectomy the eye is rotated downward with a fixation forceps, so as to facilitate the entrance of the spatula into the anterior chamber, and to permit its free movements in all directions. The instrument employed is such as all oculists use in restoring prolapsed iris. It is a flat, slightly flexible piece of steel. 25 mm. long, and 1 mm. broad, attached to a handle. The blunt surface of the spatula is placed in contact with the lens, gentle but firm to-and-fro motions are made over its surface. The end is slid under the iris on both sides of the pupil and below it, the massage being thus continued over the larger part of the lens. A half dozen to ten strokes will suffice. The spatula is carefully removed, the eye sprayed with a sublimate wash, or more often with a boric acid solution. Two drops of atropine are instilled and the eye bandaged.

Precautions.—Certain ordinary precautions must be observed in direct trituration, to which I have already called attention in my former publication. Not to exert too much pressure on the lens for fear of producing a dislocation. Not to tilt the instrument for fear of lacerating the capsule. The danger of causing dislocation of the lens is not so great as one might imagine, naturally a great deal depends upon the lightness of the manipulations, and I heartily coincide with Förster in believing that whoever can extract a cataract successfully has also sufficient delicacy of touch to perform trituration without injuring the lens.

Results.—Ordinarily no immediate results of the operation are visible. In a few cases, especially in the softer forms of cataract, where the cortex contains broad opalescent striæ, I have witnessed the separation and breaking down of lens fibres under the pressure of the spatula. The mother-of-pearl bands on the surface detach themselves from the body of the lens, split, are forced from their position, and by means of frequent fractures are transformed into a mass of fragments.

In one instance, Case III., formerly reported, the entire appearance of the cortex had undergone a complete transformation twelve hours after the operation. The cortex showed an almost uniform opacity. The less marked cases exhibit a feathery appearance of the former transparent cortex, extending usually from the capsule inward. Sometimes two, three, or more of these foci or opacities are seen, gradually they coalesce and the entire substance is involved.

The length of time required for the complete ripening of the lens varies with the nature of the cataract, and naturally also with the thoroughness of the trituration. At first, fearful of dislocation and rupture of the lens, I contented myself by sliding the spatula over the capsule and only occasionally exerting gentle pressure. As my experience increased I became bolder, and my results became correspondingly better.

I have never seen the least reaction follow trituration. The slight congestion visible a day or two afterward could always be ascribed to the iridectomy which preceded the massage in all cases but two, where I matured the lens without having first removed a portion of the iris. In not a single instance did the bandage remain over the eye more than two days, a practice I usually follow after every iridectomy. Iritis, cyclitis, dislocation of the lens, or other complications which could be regarded as a direct consequence of my procedure, have absolutely never occurred.

The absence of unfavorable symptoms constitute the main advantage of intra-ocular trituration over Förster's method. Another commendable feature is the rapidity with which the lens ripens. In one of my cases, No. 1, Förster's method was employed, six weeks later no effect having been visible, the direct trituration was resorted to and matured the lens in three weeks.

A few years ago my friend, Dr. Starkey, requested me to ripen a lens which had not responded to the indirect method. I gladly acquiesced. The result was very satisfactory, the patient reporting for the final operation a few weeks later.

Criticism.—I am not unconscious of the criticisms the direct method may provoke. They may be formulated under the following heads: Introduction of instruments into the eye; injurious effect of direct pressure of the capsule; prevention of simple extraction.

It may be regarded as an unwritten law, and one adhered to by the ablest men, that the fewer the instruments introduced into the eye the less the danger of complications and infection. However, since the introduction of strict antisepsis the danger is greatly lessened. The instrument, as already stated, is placed in boiling water for a few minutes and then dipped in a boracic acid or sublimate bath; consequently there exists no possibility of infection. Besides, the instrument is smooth and thin, and contains no irregular or sharp edges, preventing any possible bruising or tearing of the tissues.

As for the second series of objections, I can only reiterate that careful and skilful manipulation of the spatula in my hands has never been followed by any untoward symptom. Seemingly the most probable misadventure would be tearing of the suspensory ligament and dislocation of the lens. Such a mishap would surely result in an escape of vitreous during a subsequent operation for extraction of the lens. In two cases only vitreous escaped, due, however, to other causes.

In Case II. the patient was very refractory, and made a sudden movement while my cystotome was passing into the anterior chamber. In removing it I tore the zonula. I entered again and made the peripheric capsulotomy; pressure on the cornea with a spoon resulted in an escape of a small bead of vitreous. This I snipped off and extracted the lens with the greatest ease. The capsule healed, but a rent in the zonula at the upper inner part of the coloboma is still visible.

The second case of loss of vitreous (Case XIV.) was caused by an ineffectual attempt to force a large nucleus through a small corneal wound, which was enlarged on both sides with scissors. Still the lens would not move, when it was discovered that a posterior synechia constituted the hindrance. The lens was removed with a spoon. The eye made a beautiful recovery. A secondary operation made four weeks later yielded V. $= \frac{20}{40}$ with + 11 D.; a small black opening above the opaque capsule marked the tear in the zonula.

It is not my intention to discuss the various methods of cataract extraction. Knapp and Schweiger and others are pronounced in their conviction of the superiority of simple extraction over the old method associated with iridectomy. Graefe and his followers, on the other hand, decry the operation where an iridectomy is not made, and the round pupil preserved. If simple extraction were to become general, it would be argued that trituration of the lens, which I had preceded by an iridectomy, ought to be avoided. In order to overcome this drawback and make direct trituration feasible to the adherents of simple extraction I determined to triturate without iridectomy.

I succeeded in Case V. in ripening the lens in three weeks. The cataract was extracted by the simple method. The iris prolapsed on the second day, however;

I cut it off; the wound healed with a cystoid scar which causes no annoyance. V. = $\frac{2}{40}$ with + 10 D.

In Case XI. I succeeded in reducing V. = to fingers at eight feet to V. = fingers at three feet, within three days. A week later the patient could not count fingers at all. The lens was extracted at the expiration of three weeks, with splendid results.

A round pupil offers no obstacles to direct trituration; the lens surface exposed is naturally much smaller, but since the spatula can be passed under the iris effective work can be accomplished.

In order to avoid pressure on the iris, I had a special instrument constructed for these very cases. The end of the spatula is trowel-shaped one millimetre deep. The slope from the shank to the flat surface of the trowel is very gradual, so as to permit easy entrance through the corneo-scleral wound. When the trowel rests in the pupillary space on the lens, the shank of the spatula is raised above the iris and prevents contact with the latter, at the same time leaving the action of the trowel unrestricted.

Indications.—Not all cases of cataract are amenable to trituration. The hard nuclear cataracts, with a reddish brown reflex, yield least readily; the softer forms, showing broad mother-of-pearl striæ in the cortex, are the most favorable cases.

Dislocated lenses and cataracts, secondary to myopia or other intra-ocular changes, are not to be considered as coming within the range of my method. Neither have I thus far attempted to triturate cases showing a decided reflex from the fundus. In the great majority there was an entire absence of reflex, and in none of them was it possible to obtain even the slightest detailed view of the retina. It has been my practice to operate on only such unripe lenses which show a greater or less iris shadow, and which enable fingers still to be counted at a distance of from eight feet to one foot.

The following records are taken from my private and hospital practice. The clinical histories of a number of my earlier cases were not accurately kept; this will account for the small number reported.

Case I.—Mr. D. C——, aged sixty two. R. E., immature senile cataract; duration fourteen months. V. = fingers at four feet. Projection and perception of light good; iris shadow marked; cortex contains broad striæ. L. E., dislocated cataractous lens, resulting from a fall down the stairs of the hospital. June 1st, triturated according to Förster's method, but as the condition of the cataract did not change I did direct trituration July 13th. A few days later unable to count fingers close to eye, can only determine direction of movements. July 23d, extraction of lens. No reaction. Three days later wound perfectly healed, no injection, bandage removed. Secondary operation two weeks later. V. = $\frac{2}{25}$ with + 10 D. Reads finest print with + 13 D.

Case II.—Thomas S——, aged fifty. L. E., dense band-shaped opacities of cornea; immature nuclear cataract; duration about eleven months. Very few narrow striæ visible in cortex. Counted fingers at three feet. Iridectomy and direct trituration June 13th. Patient discharged a few days later and told to return at the end of three weeks. Early in July vision is reduced to qualitative perception only. Extraction of lens deferred, at patient's request, until October 8th. The zonula of Zinn was partially torn with cystotome, which was rapidly removed from the eye owing to the unruliness of the patient. A small bead of vitreous presented. This was nipped off. Rupture of capsule and delivery followed without any further complications. October 11th, wound perfectly closed; eyeball pale; bandage removed. November 6th, needled for secondary cataract. V. = $\frac{20}{100}$ with + 10 D., an excellent result when the corneal opacities are taken into consideration.

Case III.—John D——, aged seventy-eight. R. E., immature senile cataract. Duration four years. Broad striæ in cortex. Iris shadow marked. V. = counts fingers at two feet. November 5, 1891, direct trituration with iridectomy. No reaction. November 15th, qualitative perception of light; extraction of lens; clear, black pupil. No reaction. November 18th, bandage permanently removed; eyeball pale. Needled, V. = $\frac{20}{20}$ with + 10 D. + 1 D. cyl. axis 90. With addition 3 D. reads finest print.

Case IV.—Christ. H——, aged sixty-two. Immature senile cataract; duration four months; broad striæ in anterior cortex; iris shadow. V. = fingers at two feet. October 8th, direct trituration with iridectomy; no reaction. October 29th, cataract mature; lens extracted, leaving black and clear pupil. Two weeks later, secondary operation. V. = $\frac{20}{30}$ with + 9 D., reads Snellen 0.5 with + 13 D.

Case V.—William H——, aged thirty six; glass-blower. Non-mature cataracts on both eyes. Three months' duration. R. E., sees quite well, able to walk about. L. E., fingers at six feet; marked iris shadow; large amount of transparency of cortex; striæ broad, color almost white. Direct trituration, without iridectomy, November 5, 1891. Not the slightest reaction. November 25th, lens mature, no longer able to count fingers. The lens extracted with ease. No complications. November 28th, iris prolapsed. Iridectomy. Wound healed with a cystoid scar at inner angle. Early in December the cyst was opened with a Graefe knife, iris pulled forward and excised. Wound healed nicely, is but slightly elevated at one point and pigmented. Secondary capsulotomy, done early in January, resulted in V. = $\frac{20}{40}$ with + 11 D.

Case VI.—Mr. H. P——. Senile immature cataract, duration about twenty months. R. E, incipient cataract; able to read. L. E., V. = fingers at five feet. Broad iris shadow, broad striæ. Direct trituration of L. E, accompanied by iridectomy, May 22, 1891. Patient discharged a week later to return in September, not desiring to be operated on during the heat of the summer. Re-admitted in October with an acute trachoma of both eyes. Mr. P—— volunteered the information that with the operated eye he could not discern objects four or five weeks after his discharge. At the date of writing trachoma granules have almost disappeared.

Case VII.—Mrs. G——, aged fifty-five. L. E., incipient cataract. R. E., immature nuclear cataract. Counts fingers at seven feet. Duration about one and a half year. Broad iris shadow, amber-colored reflex. Very few narrow striæ in cortex. April 15th. iridectomy and direct trituration. No reaction. July 1st, extraction of large nucleus. Small quantity of cortex. Capsule thick and white. August 20th, secondary operation. V. = $\frac{6}{12}$ with + 11 D.

Case VIII.—Miss R——, aged sixty. Non-mature nuclear cataract on both eyes. R. E., V. = fingers at fifteen feet. L. E., V. = fingers at four feet. Duration, L. E., about two years. Amber-colored reflex; broad iris shadow; opalescent bands in upper onter part of cortex. October 9, 1890, iridectomy and direct trituration. Five weeks later, little change. January 3, 1891, extraction of large nucleus, very little cortex. V. = $\frac{6}{9}$ with + 10, reads Snellen 0.5 with + 14 D.

Case IX.—Mrs. F——, aged sixty-five. Nuclear cataract both eyes. R. E., lens dislocated. L. E., V. = fingers at five feet. Duration two years. Amber-colored reflex; sclerosis almost total; very few striæ visible. June 3, 1891, iridectomy and direct trituration. August 25, 1891, V. = 0; extraction of hard lens; very small quantity of opaque cortex. Pupil black. Two days later, hemorrhage in anterior chamber covering entire pupillary field. This gradually absorbed, and at the expiration of two weeks she was discharged with V. = $\frac{6}{36}$ with + 11 D. The secondary capsulotomy has not been made at date of writing.

Case X.—Mr. H. D——, aged fifty-eight, consulted me for the first time in October, 1889. He had an unripe cataract of both eyes; his vision was very much reduced. The left cataract was more advanced than the

right. I proposed the operation of trituration, to which he would not accede, however. He returned in September, 1890. The left cataract had progressed somewhat, but was far from ripe. The iris shadow was extensive, and but a few broad striæ were visible in the anterior cortex. He counted my fingers at a distance of eight feet. A dim reflex was obtained with the ophthalmoscope. I made an iridectomy and triturated the lens September 23d. No reaction followed. Two weeks later he was able only to determine the direction of the moving hand. November 30th I extracted the lens. A week later he was discharged from the Michael Reese Hospital. A subsequent capsulotomy was soon performed, followed by V. = $\frac{6}{9}$ with + 11 D. With + 15 D. he read the finest Snellen type.

Case XI.—Mr. A——, aged fifty-one, kindly sent to me by Dr. MacArthur. R. E., incipient cataract, able to follow his vocation as salesman of paints. L. E., non-mature cataract. Duration, one year. Counts fingers promptly at eight feet. Dim reflex from fundus through lower part of lens. Iris shadow. Broad glistening bands of opaque striæ in cortex. December 28, 1891, direct trituration without iridectomy. Absolutely no reaction. Discharged three days later. V. = fingers with difficulty at two feet. Made a trip to St. Paul in pursuance of his calling, but was obliged to return home after a few days, owing to his poor vision. January 25th, V. = 0. Extraction of lens followed by rapid, uncomplicated healing. V. = $\frac{20}{40}$ with + 11 D. Secondary operation has not yet been made.

Cases XII. and XIII.—Mrs. B——, aged sixty-two, L. E., incipient cataract. R. E., immature nuclear cataract, two years' standing. Amber colored reflex. Iris shadow. Counts fingers at five feet. August 6, 1889, iridectomy, direct trituration. September 10th, vision reduced to qualitative perception. Iris shadow still present, and superficial layer of cortex apparently transparent, V. = 0. October, 1889, extraction of lens in bulk. V. = $\frac{6}{9}$ + with 10 D., reads Snellen test type with + 14.

November 19, 1890, iridectomy and direct trituration of left eye, the vision of same having been $\frac{4}{200}$. The patient returned to her home and passed through a severe illness, lasting several months. She wrote to me in May that she had almost regained her strength, and that the eye was ready for operation, not being able to count fingers close to her face. I advised her to wait until October, 1891, when I removed the lens. Recovery was rapid; result after doing secondary operation excellent. V. = $\frac{6}{6}$ with + 10 D.

Case XIV.—James S——, aged sixty-five. Under observation two years. R. E., cataracta incipiens, sees sufficiently to perform ordinary work about the house. L. E., cataracta non-matura, almost stationary during this period. September, 1889, V. = fingers at ten feet. October, 1891, V. = fingers at eight feet. Broad iris shadow. Lens grayish in color, greater part of anterior cortex transparent. October 15th, iridectomy and direct trituration. Five days later can determine the direction of the moving hand, V. = 0. November 21st, Graefe's linear incision made with the left hand. Repeated attempts to deliver were ineffectual. Wound enlarged with scissors on both sides. Again failed to extract cataract. Vitreous now presented in the corneal wound. Entered with a spoon and quickly removed the lens, which was adherent to the iris. No reaction followed, and the patient was discharged from the Chicago Charity Hospital two weeks later, with a secondary cataract. A capsulotomy made December 21st resulted in V. = $\frac{20}{40}$ with + 11 D.

If I add to these clinical histories three previously published, I have seventeen well observed and authentic cases from which to draw a few deductions. All, with but one exception, Case V., were senile cataracts, and can be brought under two distinct headings. Lenses with soft cortex and lenses with large nuclei and very little cortex.

Of our Cases I., III., IV., V., VI., IX., X., XI., XIV., and II. and III. in the first publication belong to the first series, the remainder to the second.

A striking difference presented in these cases is the shorter time required for the maturescence of the softer cataracts. In none of the first series, with the exception of Case X., did more than four weeks elapse between trituration and extraction of the lens.

Ordinarily the time was even shorter. The second series does not show so favorable a record, not less than two months being required for the ripening of the more sclerosed lenses. Even this period must be considered short when compared with the natural, slow development of this form of cataract. These results are not in accordance with Förster's observation, who states that the hard opaque nuclei are more amenable to trituration. Another noteworthy feature was the almost constant absence of transparent cortical substance during the removal of the lens. This greatly facilitated the operation and lessened the dangers of subsequent iritis and other forms of infection.

Pressure on the capsule produced in several cases a thickening of the membrane. This, no doubt, was due to a proliferation of the epithelial lining of the anterior capsule similar to that observed in capsular cataract. The thickened capsule yielded as readily to Knapp's knife as did the thinner ones, and did not affect the ultimate vision.

In only two cases was direct trituration practised without a preliminary iridectomy. The results of the operation were immediate and pronounced, and demonstrated conclusively that iridectomy is not a necessary factor to the effectiveness of the intra-ocular method.

The vision obtained after extraction of the cataract was good in every instance, in one case only, No. II., was it less than $\frac{20}{40}$, and here the dense corneal opacities accounted for the apparently poor result, V. = $\frac{20}{80}$. The great majority obtained V. = $\frac{20}{30}$, and three even succeeded in reading the last line of Snellen's test types—normal sight. A more striking proof of the safeness of direct trituration can hardly be adduced.

39 Washington Street, Chicago, Ill.

Antirabic Inoculations for Epilepsy.—What connection can there be between a neurosis like epilepsy and a disease distinctly traceable to the entrance into the blood of the microbe of rabies? Vulpian long ago stated that epileptic attacks were due to an exaggerated excitability of the medulla oblongata, and we know that the variable incubation period of hydrophobia is due to the variability of the time taken by the migration of the special microbe from the seat of inoculation to the medulla. Once arrived there, the explosion occurs, and all the characteristic train of symptoms peculiar to the disease appear. In 1891 two young epileptics who had been bitten by rabid dogs were treated at Pasteur's Institute. The treatment was successful; but what was more remarkable, the epileptic attacks to which they had been subject had disappeared. Struck by this phenomenon, M. Pasteur mentioned the circumstance to M. Charcot. Recently M. Charcot sent to the Pasteur Institute an inveterate epileptic aged twelve years, who had been unaffected by all forms of treatment. Somewhat attenuated inoculations were employed, with the effect of determining, in six days after the commencement of the treatment, the total disappearance of the attacks, which had been hitherto extremely frequent.—Paris Correspondence of *The Lancet*.

The New Medical Education.—Professor Struthers, of Aberdeen, has written two interesting articles on the new medical education. He advocates less lecturing; especially he denounces the system of taking out a course more than once. He strongly recommends the further use of laboratories, and he deprecates the introduction of anatomy, except in its very elementary forms, before the first professional examination is passed.

A NEUROLOGICAL OUTLOOK.[1]

By CHARLES L. DANA, A.M., M.D.,

NEW YORK.

THE speaker began with an account of the organization of the Association, which he said took place in New York City in 1875. Eleven members were present and eight papers were read. The Association now has seventy-five members, and there was a list of forty papers on the programme. The Neurological Association was the third in the list, chronologically, of national organizations of specialists. Since its birth twelve new specialties had developed. The speaker paid a warm tribute to the character of the late Dr. William R. Birdsall. Entering upon the formal part of his Address he said :

The distinguishing characteristic of the addresses before this Association has always been their briefness, and I shall not depart from a custom so well established. Some of my predecessors have told the story of the scientific work accomplished by our society, others have suggested lines of work which we might profitably pursue in the future. I propose to dwell for a few moments upon those particular phases of neurological science which are just now most keenly interesting us, and those lines in which new developments are promised.

Clinical Work.—The subject of multiple neuritis has become a little worn and frayed at the ends ; we are yet far from knowing its ultimate pathology, and there are many interesting clinical phases which have not been mastered, but the keenness and zest of our inquiry along this line has little waned.

Muscular dystrophies and muscular atrophies have engrossed great attention and received from the hands of several of our members most important contributions. This subject is not yet closed, but we have a knowledge of it now vastly more complete, systematic, and satisfactory than was possessed even five years ago.

The enthusiasm with which we plunged into brain localization and pointed out the areas for the surgeon to operate has perhaps received a little check. The halo which surrounded cerebral surgery, luminously adorning the anatomical landmarks used in cranial topography, has lost some of its lustre. Even the hopelessness of microcephaly has failed to revive, except temporarily, our lively interest in the possibilities of what the surgeon can do in aiding our therapeusis. We shall work on here patiently, but not with the hopefulness felt five years ago. The great achievement of spinal surgery is to have shown that the opening of the spinal canal is relatively safe. With this basis to start upon, something may be expected of spinal surgery, which in the past has had a few real triumphs and many failures.

We have been quarrelling annually over the interesting but somewhat transcendental problems of syringomyelia, analgesic whitlows, and the differentiation of cutaneous sensations. There is no doubt whatever that such discussions stimulate investigation and promote more thorough clinical work, although in the western hemisphere the number of authentic cases of these diseases is extremely small.

Progress of Anatomy.—In no department of neurological science, however, have there been results so far-reaching in importance and so absorbing in interest as in that of the finer anatomy of the nervous system Through the help of the Golgi stain and its modifications by Cajal, through the labors of Kölliker, His. Waldeyer, Edinger, Lehassek, Marchi, and others, entirely new views of the intimate structure of the nervous system have been apparently established. The discovery of the origin of the sensory tracts of the cord from the posterior spinal ganglia is not the least of these, and is alike important clinically and remarkable as an illustration of exact anatomical demonstration. The fact that each nerve-fibre is but the prolongation of a nerve cell process has been made more indubitable ; but besides this, it has apparently been shown that each nerve-fibre gives off in its course branches, or "collaterals," which put the individual fibre into connection with other parts in a way not before suspected and not yet clearly understood. Still further, it has been shown that each nerve-fibre ends in a fine brush work of nervous filaments, which surrounds the cell to which it goes in a kind of basket-work that just touches but has no anatomical continuity with it. One nerve-cell with its process is never connected anatomically with another, but just comes near enough perhaps to titillate and touch it off Waldeyer has coined a new word for the nerve-cell, fibre, and end-brush. He calls it a nerve unit, or "neuron." The word will fill a place in neurological nomenclature.

New stains and improved methods of research have also led to the discovery of new forms of cells in the cortex of the brain, and to a better knowledge of the marvellous net-work of fibres in this area. Studies here in the future will surely throw fresh illumination on the problems of psychiatry and psychology.

Pathology.—Not very remotely connected with this subject of anatomy is one which has for some time deeply interested myself and others—the true nature of many of the so-called inflammatory and degenerative processes. There can be no question that the older terms so commonly employed, such as chronic myelitis, anterior poliomyelitis, parenchymatous inflammation, encephalitis, have given a wrong idea of the true nature of the pathological changes which underlie them. The term sclerosis has been used to indicate a degeneration which is primary, a degeneration which is secondary, and a simple reparative process the result of an acute destruction of tissue. The part that the neuroglia tissue plays in such scleroses, aside from the connective tissue, has surely been much misunderstood and is not yet at all definitely settled. I am sure that in future, when the new pathology of the nervous system is written, while the old terms may be retained for their convenience, it will be made clearly understood that the "itis" does not by any means represent an inflammation, or the "sclerosis" indicate always the same thing. I do not know that we can sharply distinguish processes which are degenerative from those which are inflammatory, but in those which are typical it is evident that the distinction is extremely great. The inflammation has to do with the connective tissue, blood-vessels, and lymphatics ; it is the reaction of the organism to an irritant, and it is an expression of the attempt on the part of nature to rid itself of a noxious substance : it is essentially conservative and reparative. The degeneration is a process which seems allied to premature death; it affects the parenchyma first, and this tissue dies beneath its subtle and malignant influence. There is no conservative function connected with it, so far as we can see. The process is a progressive and continuous one, and eventually fatal. So far, its ultimate cause and its cure have entirely evaded our powers, and there is no greater reproach to neurology, in my opinion, than these facts What more painful spectacle is there than the steady onward progress of locomotor ataxia, with its ferocious pains ; or what more pitiable than the deathward march of a patient with progressive muscular atrophy or a bulbar palsy? Standing before such cases we feel always the limitations, the helplessness of our science, and perhaps some mortification, even resentment, at the powerlessness of our art. It is, therefore, in my opinion, along the line of the degenerative diseases that we need to spend for some time our very greatest efforts. We should try and learn, not so much the clinical manifestations of degeneration, which have become almost tiresomely familiar, but the ultimate cause. What does it? why does it so persistently progress? And the radical cure—is there nothing in art or nature which seems for more than a moment to stay its progress? It does seem to me possible, if not probable, that there is at the bottom of these troubles some toxine, evolved perhaps from an infection, perhaps from some dyscrasia, which selects now one part

[1] Abstract of the Presidential Address delivered at the Seventeenth Annual Meeting of the American Neurological Association.

of the nervous system, now another, for particular destruction.

Therapeutic Outlook.—If this be so, there must be somewhere in the storehouse of nature an anti-toxine which will prevent its progress or can confer immunity upon the individual. If we can find in the range of bacteriological knowledge or experience a bacillus whose poison will produce a locomotor ataxia or a polio-myelitis, it may be possible, through some modification of it, to obtain a virus which will secure a happy therapeutical end. The rewards will be great for him who discovers such a substance. A possible immortality, which its discovery would secure, to say nothing of the immediate rewards to himself and humanity, should be a sufficient stimulus to all of us to work in this direction.

But, after all, such speculations as these are perhaps only fanciful. It may be that in some persons certain cells or systems are born to die prematurely. Meanwhile we must work patiently and faithfully, building up little by little the framework of that edifice which will eventually be the perfected science of neurology. Such an edifice we can, here among ourselves at least, believe will be by far the most glorious of any which adorns the circle of the medical sciences.

ICE SCIENTIFICALLY APPLIED OVER THE SPINE IS AGREEABLE AS WELL AS BENEFICIAL TO THE PATIENT.

By B. O. KINNEAR, M.D.,

NEW YORK.

An objection frequently advanced to the use of cold over the spine, and a formidable one to combat, on account of its universal prevalence, is the impression that it will "chill the body"—"it is heroic"—and must be exceedingly disagreeable to the patient.

The real fact, however, is that with people who already suffer from cold sensations, cold or cool legs and feet, cold arms and hands, or cold body, no known remedy acts more quickly, powerfully, and pleasantly to overcome this abnormal condition. This truth is now proven beyond controversy, so far as my own observation is concerned. From the results arrived at in treating persons so affected, I am convinced that the body, arms, and legs may be permanently warmed by ice placed over the spine in bags four and a quarter inches wide in the adult, and the strength of the patients largely and permanently added to, even though they may have suffered for years. The difficulty arising to prevent physicians and the public from acceptance of this verity is a simple one.

It is practically true that cold applied locally upon the surface of the body, except during the process of inflammatory diseases or active congestions, will, and does, chill the individual; and thus it is argued that cold over the spine must inevitably produce the same effect.

Such a conclusion is totally erroneous. My belief is, that a cool or cold surface of the body or extremities not due to some immediate local cause, such as exposure to cold, etc., but forming a constant factor in the daily life of the individual, is the resultant of an increased circulation, greater than normal, of blood, within certain nervous centres—the sympathetic ganglia—situated close to the spinal cord; and whose chief function for many years has been declared to be, by many eminent physiologists, that of contraction of the arteries. These knots of nervous material, or vasomotor centres, having their function increased by the stimulation of more arterial blood than is required for their healthy action, issue more forcible nervous currents through their nerves to the elastic and contractile coats of the smaller arteries in the body and extremities, causing in these vessels a powerful closure.

This contraction diminishes the usual and normal amount of blood in the parts controlled by the centres, and we have, as a consequence, cold body, arms, or legs, according to the centres involved.

Now if the circulation is decreased permanently in any portion or portions of the body, we have lessened nutrition and physical prostration in the individual, as most graphically presented in people suffering from the so-called nervous prostration, with cold arms and legs almost a constant factor.

This disease, in the writer's opinion, should be properly termed physical prostration, due to central vasomotor stimulation, through which increased energy the blood is largely shut off from the whole surface of the body and muscular apparatus of the extremities.

Now, when such a state results the bulk of the blood is confined to a narrower circuit, viz., to the internal organs; therefore, such patients are liable to take cold easily, and to sudden congestions of the bronchi, lungs, liver, uterus, etc., but are especially subject to nervous disorders, owing to the pressure and stimulation of an undue circulation within the brain and spinal cord. In his work on "Neuralgia and Kindred Diseases of the Nervous System," page 314, Dr. John Chapman, of Paris, says: "Were I to adduce all the evidence in my possession that ice applied along the spine, in those cases in which it is therapeutically desirable, is agreeable, soothing, and refreshing, I should fill a long chapter with this evidence alone.

"Many persons shudder at the bare idea of having a column of ice placed along the back, and think that were it continued there for a moderately short time the discomfort would be extreme; that its continued use would be followed by more injurious results, and in any case the remedy would be worse than the disease. These suppositions, however, are not justified by experience, which, in fact, completely contradicts them."

Again: "With reference to the sensations produced by the spinal ice-bag, my readers must bear in mind that it is designed not for the healthy but for the sick, and only for those sick persons in whom has become established precisely that morbid condition of the circulation of the blood in the nervous centres which the application of cold is of all agents the most capable of subduing.

"Hence in these cases, and in these only, inasmuch as the spinal ice-bag subdues a morbid condition in the very citadels of life, a condition in which the phenomena of the disease in question originate, and inasmuch as the cold restores the circulation of the blood in those nervous centres to its normal state without contaminating or embarrassing the system with any medicines, it seeems, *à priori*, that such physiological changes must inevitably be accompanied with sensations of comfort and pleasure, as experience proves them to be."

The amount of evidence I could adduce from Dr. Chapman's writings, as to the soothing and pleasant effect of ice to the spine, when it is rightly used, is very large, but chiefly confining the subject to my own experience the testimony is quite conclusive.

Only two days ago a lady, who has suffered now for several years from acute mental as well as physical hyperæsthesia, accompanied by constantly cold legs and feet, said to me: "Since I used the ice bag my legs and feet have become much warmer, my head is much clearer, I am less irritable, the application at the time quiets and soothes the unremitting restlessness to which I am subject; I become sleepy, and to-day, when a sudden and loud noise was heard, which would usually make me jump, I did not mind it at all, and my husband said to me, 'Why, what has become of your nerves?'" This patient has been under treatment only three weeks. In the case of a patient treated some years ago in Boston, suffering with the so-called American cholera, being almost in a state of collapse—the legs blue up to the knees, and the arms to the elbows—the application of ice over the spine stopped both the vomiting and purging at once, thoroughly warmed the body, and restored a natural redness to the limbs in an hour, drawing the following exclamation from the pa-

tient: "Doctor, this is the most comforting thing I ever felt." One lady remarked: "I would not go anywhere without my ice-bag. Whenever I am tired, or nervous, or cannot sleep, I put it on, with immediate relief and comfort." Another said, "Why, it is not cold at all! it warms me!"

A patient whom I treated for mental delusions, thinking her friends her enemies, and who completely recovered, spoke as follows, "The bag has relieved me from all those disagreeable 'feelings' from which I suffered, and is very soothing." A patient treated in Cambridge, Mass., afflicted with such a cold body that in the hottest summer weather he slept under several blankets, was wholly relieved of the condition in six weeks, as well as from terrible nervous suffering, informing me that "he felt like a new man."

I have often had hysterical patients quieted in a few minutes by the bag over the spine, falling asleep, and frequently remarking afterward: "How delightful! how comforting!" One man, suffering with general eczema and also with cold feet, several times voluntarily expressed himself thus: "When the bag is on, not only does it at once relieve the intense itching and burning of the eczema, but I can feel the blood rushing into my legs and feet, so that they become at once warm and comfortable." I have myself used the bag frequently, especially when worried over difficult cases, or when anxious from any other cause, with immense comfort and relief, being enabled to exercise a more accurate judgment in decision, owing to the mental quietude which results, this calm being due to a withdrawal from the brain of an excess of blood, which is almost invariably present in states of mental excitement, according to my observation since using this system.

Case I., reported in my article on "Neuro-dynamic Medicine," published in the *Boston Medical and Surgical Journal* some years ago, reports: "I have been sleeping from the first of the year an average of from five to seven hours per night. All the disagreeable nervous symptoms that so much distressed me, after any exertion, have gone. My lower extremities are as warm as a baby's." This patient was so nervous and irritable that he could scarcely bear to be looked at without anger, and his legs and feet were so cold that they felt precisely like those of a corpse. He had also been in a terribly sleepless state for two years.

Never have I known the ice-bag to be disagreeable to any patient, unless applied over the wrong sections of the spine, or when there was some diseased condition, which, either permanent or temporary, prevented the ice from producing the effect intended upon the nervous centres or those portions of the body controlled by them. When in any case the beneficial effects of the remedy cannot be obtained, the sole explanation is that some organic disease is present. The treatment of such conditions is separately considered in Chapman's system. In a handbook of this method, soon to be published, particular directions will be given for the special mode of application, as well as the dangers to be avoided, in each individual disease.

Hundreds of people have assured me that the effect of the ice, when expertly used over the spine, is agreeable, soothing, and beneficial, and they who most dread its application, namely, those who are always endeavoring to keep warm, are certainly the very ones who obtain the most benefit, who are warmed and comforted, relieved and quieted.

A few extracts from Dr. Chapman's cases, reported in his work on "Neuralgia," will not be out of place:

"Dr. Moorhead, relating his own experience, Case XXVII., says: 'The ice-bag proved most grateful.'

"Another medical man (Case XXVIII.) writes: 'One thing has struck me, viz., the liking that sensitive, chilly patients have for the cold bag to the spine, although frightened to think of it before they make trial.'

"Dr. Druitt remarked: 'There was no mistaking the testimony of the patients that those results had been most beneficial.' (He was referring to cases of epilepsy and paralysis treated by Dr. Chapman.)

"Case X.: 'Found the ice pleasant.'

"Case XXIX.: 'I do not think I shall ever be able to do without it; it is so comforting.'

"Case XL.: 'It is very agreeable.'

"Case LXV.: 'The ice was quite refreshing.'

"Case LXXVI.: 'I can sleep any time in the daytime now; I fancy the ice draws you to sleep.'

"Case XCV.: 'I like it; it braces me up.'"

Among those upon whom the ice-bag has been used understandingly there is but one opinion, and that is, that ice used over the spine to relieve the states referred to is quieting, restful, refreshing, and invigorating.

46 West Seventeenth Street.

Progress of Medical Science.

Treatment of Dysentery. — Drs. Lardier and Pernet recommend salol and iodoform in the treatment of dysentery; the former in doses of four grains, suspended in mucilage, the latter in quantity of four to six grains daily, combined with opium, in capsules. For the relief of tenesmus, warm boracic acid enemata, and in obstinate cases suppositories of cocaine and opium, were found beneficial.—*The Canada Lancet*, May, 1892.

Habitual Constipation.—Constipation in infants is best treated, according to Karnitsky, by abdominal massage, and may be cured without the aid of purgatives. The younger the child the more readily is the cure effected, though here mild manipulation and short séance is the rule. Three to ten minutes' massage is usually sufficient for any case.

The Pneumococcus in Cerebro-spinal Meningitis. —Dr. Ghika (*Bul. de la Soc. Anat.*, February, 1892) relates the case of a woman who died in hospital, three days after admission, with typical signs of cerebro-spinal meningitis. There was a family history of phthisis, and patient had formerly shown well-marked symptoms of this disease. On post-mortem examination pronounced congestion was found at the base of both lungs, together with atelectasis. At the apices were evidences of old tubercles, and in the right apex a focus of cheesy matter. The cerebral meninges were also congested, and small purulent foci existed over the pia mater as well as on the convexity of the brain, etc. Pus was demonstrated along the Sylvian artery, on the right side, and in this pus pneumococci were found present, although the lungs showed no signs of pneumonia. There was also congestion of the meninges of the cord, and over the posterior portion of the lumbar cord another large purulent focus was discovered. Cultures of the pneumococcus obtained from the congested lungs appeared extremely virulent. The author believes that the pneumococci which determined the congestion of the lungs also caused the meningitis.

Caloric Epilepsy.—Dr. Benedikt relates the case of a lad of fifteen, who from one to several times daily would have an elevation of temperature, attended with loss of consciousness whenever 42.4° to 43° C. were reached. As the attack, which lasted from ten to thirty minutes, came on, the patient assumed a staring expression and invariably murmured the word "robber." The pulse-rate never exceeded 104 per minute. As soon as consciousness returned there was always complaint of contraction of the nuchal muscles, prostration, and visual hallucinations. There were no cerebral symptoms during the intervals. Moderate splenic enlargement, slight albuminuria, and increase of white blood-corpuscles were found. After cautery points over the coronal suture, and sodium iodide, the fits gradually ceased. The author looked upon the case as one of microbic or ptomaïnic intoxication. —*The British Med. Journal, Epitome*, May 14, 1892.

MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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PROGRESS OF THE CHOLERA.

THE latest cable despatches bring the news that the cholera has certainly appeared in Moscow, although the authorities continue to deny that any cases of the disease have occurred in that city. It is, however, of little consequence what the Russian officials admit or deny, for nobody looks to the government returns as even approximately indicating the actual condition of affairs. The only other source of information, and the one upon which the outside world is forced to depend, is in the telegraphic reports of newspaper correspondents, and as these are subject to revision or suppression by the censor, it is evident that we know little concerning the actual extent to which the disease prevails.

The first reports of the present outbreak which came to us were from Meshed, in Persia, a resort for Mohammedan pilgrims second only in importance to Mecca. The presence here of the disease in epidemic form was concealed as long as possible by the Persian authorities, and it was not until the pilgrims began to disperse, taking the disease with them as they went, that the true state of affairs was ascertained. Even then it might have been possible to keep the scourge out of Europe, had it fallen to the lot of any country but Russia to guard the entrances. It was along the line of the Trans Caucasus railroad that the cholera advanced, the feeble efforts of the inane Russian sanitary authorities to keep it back being without the slightest effect.

The first city attacked was Baku, an important petroleum centre on the Eastern shore of the Caspian Sea. Thence the disease advanced to Astrakhan, at the delta of the Volga River which empties into the Caspian near its northern extremity. At this season of the year there is a very active traffic on the Volga, steamers ascending the river as far as it is navigable. As was to be expected from the fact that practically no quarantine regulations were enforced, the cholera ascended the river with the steamers, appearing successively at Saratov, Samara, Simbirsk, Kazan, and finally at Nijni-Novgorod, the seat of the great annual fair.

From this point to Moscow, by way of Vladimir, is a distance of about 250 miles and the communication between the two places is constant and extensive.

There is another route also by which cholera is approaching Western Europe, and that is by the Black Sea. Taganrog, Rostov, and other towns bordering on the Sea of Azov have been invaded, as have also several places in the Crimea.

The Austrian and Prussian officials are, however, thoroughly aroused, and are taking the most stringent measures to arrest the progress of the disease at the frontier. Special barracks for the frontier guards have been erected, and every person crossing the border is subjected to a rigid medical examination.

It is an encouraging sign that, despite the favoring conditions furnished by the personal uncleanliness of the Russian peasant, and the absolute indifference and inefficiency of the Russian sanitary authorities, the cholera has progressed so slowly. Making all allowances for suppression of the truth by the officials, it is evident that the mortality has not been excessive, and we may therefore be allowed to believe that the disease exists in mild form, and to hope that the epidemic may not increase to such overwhelming intensity as to make the exclusion of the disease from Western Europe an impossibility.

As to the danger of an invasion of this country, we think there need be no apprehension. Sanitary science is not as it was thirty, or even ten, years ago, and we believe that, even should the disease make its appearance in the countries of Europe bordering upon the Atlantic, it will be possible to keep it out of this country. The Marine Hospital Service is alert to detect any cases among immigrants, and New York, which is the most exposed of all American ports to the disease, has a quarantine which ought, and doubtless will, see that no case of cholera enters America through this channel.

THE CAUSE AND TREATMENT OF GRAVEL AND THE URIC ACID DIATHESIS.

IT is with a certain sense of weariness that we pick up a new contribution to the subject of uric acid, gravel, and gout. Our experience in the past is that such essays all begin with learned chemical formulæ and end in exercise and potash. Sir William Roberts, however, touches no subject which he does not adorn with the results of careful research and lucid reasoning, and we have perused his Croonian Lectures on the Chemistry and Therapeutics of Uric Acid, Gravel, and Gout with more than ordinary fruitful results.

Sir William gives us a historical introduction which we can pass by with simply the remark that, in this country at least, the work of Bence Jones has not been so unappreciated as he seems to think. Regarding the chemistry of uric acid and the urates, the results of Dr. Roberts' studies show these facts: That there are three orders of uric acid salts; that in addition to the neutral urates and biurates, which have long been recognized, there exists a third order, namely, the quadriurates, which in reactions and chemical constitution differ widely from the other two; that the neutral urates, from their mode of origin and reactions, cannot be regarded as having any possible concern in the vital history of uric acid; that the biurates, although known pathologically as constituents of gouty concretions, are not really known to us with certainty as physiological constituents, either of the blood or of the urine. On the other hand, Sir William shows that the quadriurates existed normally in human urine, and in the urine of birds and serpents; that when uric

acid is brought into relation with the bodily fluids—with the blood, lymph, and synovia—it enters into solution in the first instance, not as a neutral urate, nor as a biurate, but as quadriurate. From all these considerations it would appear, says the lecturer, that whenever and wherever uric acid exists in the healthy organism, it exists exclusively as a quadriurate. The quadriurates may therefore be regarded as being in a special sense the physiological salts of uric acid, and as constituting the only form in which uric acid subsists in the living body in the normal state.

This is an important starting-point. Dr. Roberts then goes on to show that uric acid is precipitated as a biurate in gout *this* side of the kidney, while it is precipitated as uric acid crystals *that* side of the kidneys in gravel. He considers the two disorders by no means identical. Taking up the subject of gravel, he finds this due to the precipitation of uric acid in the renal and vesical urine. The causes of this precipitation are the degree of pigmentation of the urine, the proportion of salines, the percentages of uric acid, and, above all, the grade of acidity of the urine.

Turning to the subject of treatment, Dr. Roberts discusses first that of gravel, which he considers "a primary vice of the urinary function." Since pigments in the urine lessen the tendency to the precipitation of uric acid, it might be thought that something might be done in this direction therapeutically. The lecturer, however, thinks this field unworthy of any effort. As to the deficiency in salines, the evidence points strongly to the suggestion that the subjects of gravel should be advised to take habitually with their meals as much culinary salt as their palates will tolerate. "I may also remind those whose lot it is to practise among the children of the poor, or among the rice-eating populations of tropical and sub tropical countries, that it would be well. in cases of gravel, to see that the patient's food should contain an adequate proportion of articles rich in saline materials, that is to say, of milk, meat, fish, eggs, and salads."

As to the excess of uric acid in the urine, Dr. Roberts believes it to be not necessarily a matter of importance. This is contrary to the ordinary view, which holds that the occurrence of uric acid gravel depends simply on an excess of this substance in the urine (so-called uric acid diathesis). This assumption pervades the entire argument of most writers on gravel, and dominates all their plans of treatment. It is only partially true. It is on this theory that the various and contradictory systems of diet have been built up. As the outcome of his experience Dr. Roberts concludes: That persons who are subject to uric acid gravel, and who are also troubled with a large appetite, should seek to allay their cravings and to lessen the intake of nitrogenous material by the free use of farinaceous articles of food with salads, fruit, and garden vegetables, all of which are comparatively poor in albuminoid constituents.

The excessive acidity of the urine he regards as the most important matter from a therapeutical point. It is advised that the patient take a single good dose of citrate or bicarbonate of potash at night, so as to prevent the tendency to increased acidity during fasting hours and sleep. The patient should not go long without eating, that is, he should not fast from breakfast till late in the day, as is done by some. The use of alkaline mineral waters is of course indicated. The treatment of gravel is a preventive one. Dr. Roberts has no faith in the solvent properties of any mineral waters, and he does not deign to mention piperazin.

THE SPITTING HABIT.

Much good has been accomplished in New York, Pittsburg, and other cities through the labors of societies of public-spirited women organized for the purpose of improving the methods of street cleaning and garbage removal. We publish with pleasure in another column a letter from the Secretary of one of these organizations in Pittsburg, recounting the further good work accomplished by its members in repressing the spitting nuisance. As we have before pointed out, apart from the question of abating a nuisance, there is an important hygienic side to these efforts, for it is well known that more than one disease is spread in great measure through the sputum. We are glad that the ladies of Pittsburg have taken up the combat against this disgusting and dangerous habit. We welcome them as powerful allies in this good cause, and we hope that they may soon have equally zealous imitators in every other city of the country.

THE MEDICAL SOCIETY.

It looks as if the old fashioned Medical Society meetings were beginning to lose their ancient and pleasing characteristics In the volumes of transactions laid upon our tables we find every year fewer of the marks of the presence and influence of the fathers; the address of welcome, the response; the remarks to the ladies; the annual oration by the local statesman; the long report of the committee on ethics, and prizes, and necrology; the colloquial and extended discussions, with here and there a paper containing the report of a case; the complicated parliamentary disturbances, and the flowing farewell of the president. Many of these features are changing; papers are increasing in number; there is some impatience over the long talkers; the easy-going way in which the meetings went along is giving place to the present tempestuous methods of rushing and rustling. The paper must be short, the discussions shorter; and the more there is on the programme, the more successfully scientific is the meeting. The social features, to be sure, are not neglected, but they are set apart and done by schedule also. One must be scientific from ten till five, and sociable from six till eleven. During the remainder of the time he feels like resting, and he generally returns home exhausted by hard listening, heavy eating, and a general excess of medical papers, social indulgences, and an unsterilized water-supply.

We are not going to admit that the older way with its atmosphere of leisure, somnolence, hospitality, and ease was the better one. There was less science then, less evidence of progress, of mental activity, and we may add, less commercialism. But the modern way is not perfect. It tries to do too much, and wastes much energy in the effort. Medical societies have two distinct functions, the advancement and unification of medical knowledge, and the promotion of mutual acquaintance and good-fellow-

ship. It is in regard to the first point that the failure is most lamentable. The reading of papers which will soon appear in some medical journal surely does not promote science. It can only do so by eliciting discussion and comments. It is here that our societies fail, and that improvement must be made.

News of the Week.

Professor Peter Wendover Bedford, editor and founder of the *Pharmaceutical Record*, died July 20th at the Profile House, White Mountains, from apoplexy. Professor Bedford was born in Johnsville, Dutchess County, N. Y., August 1, 1836. In 1858 he was graduated from the New York College of Pharmacy. In 1866 he established the *Pharmaceutical Record* and became its editor. Professor Bedford was Secretary of the College of Pharmacy, and was also professor of pharmacy in the college.

A Small-pox Scare.—Considerable alarm was created last week among the summer visitors to Block Island, by the occurrence of some cases of small-pox among the servants of one of the hotels. The hotel was immediately quarantined, and no new cases of the disease have developed; but many of the guests have been frightened away from the island, and it is probable that the season, which promised to be a very successful one, has been ruined.

Arsenical Wall-papers in England.—*The Lancet* has had a special analytical commission sitting on this bugaboo, and it comes to the following conclusion: "Owing doubtless to the action of the medical profession in unanimously condemning the practice of employing arsenical colors in wall-papers—an action in which *The Lancet* took no small part—wall-papers loaded with arsenical pigment have apparently become a thing of the past, for among many specimens obtained by us from several respectable makers, those containing any arsenic at all contained it in almost imperceptible quantity, while others gave no response to a test which serves to detect the one fifty-thousandth part of a grain. Notwithstanding all this, it is necessary that a careful examination of wall-papers selected haphazard should from time to time be made in order that this satisfactory state of things may be maintained."

The American Health Resort Association.—This Association met at the Tremont House, Chicago, June 30th, with President T. C. Duncan in the chair. There were present representatives from numerous States, Canada, and Costa Rica. The President delivered an address on the work of the Association for the past year. In their investigations the claims of New Mexico as a resort for consumptives were fully sustained. The following are the titles of papers read by members of the Committee on Climate: "The Climates and Resorts of British America," "The Climate of the Northwest," "Climate of New Brunswick, and Its Relations to Consumption," "Consumption in Michigan," "The Climate of Napa Valley, California," "The Climates of California," "The Land of Sunshine," "The Climates of Nebraska" were presented in a report by C. W. Brown, of Superior, and "The Relation of Sun Spots and Magnetic Disturbance to Climatic Change." A strong resolution was adopted urging the medical profession and the public to give more attention to arresting the great mortality produced by phthisis pulmonalis. It was announced that a Congress of Climatologists would be held during the World's Fair in Chicago. The Association agreed to co operate with that Congress and meet next year in executive session only. Other papers presented were: "New England Climate and that of New Mexico," "Observations on California Climate," and "Climate Maxims." The Committee on Health Resorts presented the following reports: "The Value of the Lake Superior Region as a Resort for Consumptives in the First Stages of the Disease," "Texas as a Resort for Consumptives," "Experience at Resorts and with Climates," "Costa Rica as a Health Resort," "The Lake Superior as a Health Resort," "The Adirondack Region and Its Relative Humidity," and "The Claim of Honduras as a Health Resort." The following communications were presented by the Committee on Mineral Waters: "Mineral Waters, Their Analyses and Uses," and "Bacteria in Mineral and Potable Waters." There were presented reports on the Hot Springs of Las Vegas, N. M., Cartago, Costa Rica, and Ojo-Caliente, N. M., also on those of South Dakota, Salt Lake City, and Eureka, Ark. The Association was invited to send representatives to test their merits.

The Treasurer reported a balance of $100 on hand. The following were the officers elected for the year: *President*, T. C. Duncan, M.D., of Chicago; *1st Vice-President*, J. F. Danter, M.D., of Toronto, Ont.; *2d Vice-President*, I. N. Danforth, M.D., of Chicago; *3d Vice-President*, W. P. Roberts, M.D., of Boston, Mass.; *Treasurer*, T. S. Hoyne, M.D., of Chicago; *Recording Secretary*, W. A. Chatterton, M.D., of Chicago; *Corresponding Secretaries*, J. D. Hartley, M.D., of Chicago; W. S. Haines, M.D., of Chicago; W. W. Van Barry, M.D., of Philadelphia. The Association adjourned to meet during the session of the Congress on Climatology during the World's Fair next year.

Information concerning the Association may be obtained by addressing the Corresponding Secretary, Dr. J. D. Hartley, Chicago., Ill.

Therapeutic Application of Yawning.—In certain affections of the throat, such as acute pharyngitis, catarrh of the Eustachian tube with pain in the ear, a Swiss *confrère* says that he obtains excellent results from making the patients yawn several times a day. It produces, it seems, almost instantaneous relief; the symptoms rapidly subside, and the earache disappears. Frequently the affection is cut short by this novel treatment. Yawning produces, as everyone knows, a considerable distention of the muscles of the pharynx, constituting a kind of massage, and under this influence the cartilaginous portion of the Eustachian tube contracts, expelling into the pharynx the mucosities there collected. According to M. Naegéli, yawning is much more efficacious for affections of the tube than the methods of Valsalva or Politzer, and is more rational than the insufflation of air, which is often difficult to perform properly.

Another Case of Typhus Fever was detected among the passengers of the steamship Rugia, which arrived a few days ago from Hamburg.

Oxychinaseptol is the name of the latest antiseptic. Its use was demonstrated at the Eleventh Congress for Internal Medicine at Leipsic.

Epidermim is the name given to a new basis for ointments, composed of wax, water, glycerine, and an adhesive substance made of gum arabic and wax.

A Boy with a Bird's Head is being exhibited at the museums. The bird's head means that the skull has a peculiar shape, which Virchow calls nanocephalic.

For Urticaria, Quinquaud recommends alkalies internally and externally, a lotion of chloral 5.00, boric acid 45.00, and water 200.

Professor Koch has of late been incapacitated from work, and there is grave reason to fear that the condition of his health is such as to preclude the resumption of his duties for some time, at least.

The Epidemic in Paris is one of cholera nostras only.

A New Health-Resort.—Chicago has suddenly and to her own astonishment, no doubt, sprung up as one of the most remarkable health-resorts in the world. It is not so much a matter of ordinary observation as of statistics, which makes her so healthy. These statistics by the very latest census show that Chicago has a population of 1,500,000 inhabitants, or thereabouts. Her death-rate in July was a little over 400 a week; hence her mortality-rate for the year is about 14 per 1,000! Either the population is wrong or Chicago is the most salubrious large city in the world.

The American Therapeutist is the title of a new journal published in this city, and edited by Dr. John Aulde, of Philadelphia.

The Omaha Clinic publishes in one number three original articles, all of solid scientific value and worthy of a great medical centre. We propose to look out for Omaha as the coming metropolis of scientific medicine.

The Summer Season is at its height and the columns of this popular journal are open to cures for poison-ivy, summer diarrhœa, and preventives of mosquitoes.

A Cooling Drink.—A physician of this city takes antipyrin and water to keep down his temperature.

The Spiritualists are greatly pleased over the conversion to their ranks of the celebrated anthropologist, Professor Cæsare Lombroso. Nothing like it has happened since the testimony of Crookes to the reality of psychic force. It seems that Lombroso has gone no further than to affirm that certain table-tipping and like exhibitions, of prestidigitation were not "fakes," but real manifestations of occult force. This is surely going far enough, and we trust that the eminent savant is not going to lose his head over the silly humbug of old-time spiritualism.

A Seventh Case of Traumatic Tetanus Treated by the Tizzoni-Cattani Antitoxin.—Another case of pronounced tetanus, in which the treatment by the tetanus antitoxin was successfully applied, is reported by G. Casali (*Rif. Med.*, June 1, 1892). The details are as follows: The patient, a woman aged twenty-two, developed symptoms of the disease eight days after receiving an injury to her foot. The wound had quickly become inflamed, and the inguinal glands enlarged and painful; it had been in consequence washed with carbolic lotion and dressed antiseptically. The progress of the symptoms was fairly rapid, and when received into hospital, on the fourteenth day after the injury, the jaws were tightly closed, speech was indistinct, slow, and painful, there was marked "risus sardonicus," the muscles of the neck and back were stiff, and there was also some spasm of the injured limb. Tizzoni, on being summoned, confirmed the diagnosis, and cauterized the wound with silver nitrate, recommending the daily application thereto of the caustic in a one per cent. solution.

International Congress of Physiology.—The second meeting of the International Congress of Physiology, as already announced, will be held at Liége, on August 29th, 30th, and 31st.

Italian Congress of Laryngology.—The Italian Society of Laryngology will hold its first meeting in Rome about the middle of October. Among the subjects on the programme for discussion are the following: Phases, Nature, and the Treatment of Laryngeal Papillomata, to be introduced by Professor F. Massei; Diagnostic Importance in Ear Diseases of the Perception of Sounds by the Cranial and Aërial Paths, by Dr. Corradi; Diagnosis and Treatment of Diseases of the Sinuses Communicating with the Nasal Cavities, by Dr. Strazza. Communications have also been promised by Dr. Abate on the Diagnosis of Gouty Laryngitis; and by Dr. Fasano on the Co-existence of Syphilis and Tuberculosis of the Larynx, and on the Mercurial Treatment of Certain Nasal Scrofulides.

The Brains of Men and Women.—We find the following story, which, says the *British Medical Journal*, we venture to commend to the attention of Sir James Crichton-Browne, in a German paper. The late Professor L. Bischoff, the distinguished physiologist of Munich, was, it appears, fond of insisting on the intellectual inferiority of women to men, a fact which he attributed to the relative lightness of the female as compared with the male brain. As the result of laborious research, he had found that while the average weight of a man's brain is 1,350 grammes, a woman's only weighs 1,250 grammes. The fair sex must have felt itself amply avenged when, on the ungallant professor's death, his brain was found to weigh only 1,245 grammes. The ladies will probably say that this is only what might have been expected, and there is a poetical justice about the *dénouement* which makes one wish that the story may be true. The moral of the affair seems to be that men of science who deny the intellectual equality of the sexes on the score of relative weight of brains, should leave strict injunctions that their own brains are not to be examined after their death.

The Apothecary's Oath.—A correspondent of *The Medical News* writes: "While reading Boas's "History of Medicine," I found the following oath, as taken by the apothecaries of the thirteenth century: 'To honor, esteem, and serve the doctors of medicine, . . . to speak no evil, . . . and to do everything which may contribute to the honor, reputation, embellishment, and majesty of medicine.' Is there a nineteenth-century apothecary that would show his allegiance to and dependence upon the medical profession as did these men of old? Where has progress shown itself along this line? What cares the druggist for the doctor to-day when he has the quack to back him?"

Society Reports.

AMERICAN NEUROLOGICAL ASSOCIATION.

Eighteenth Annual Meeting, held in New York, June 22, 23, and 24, 1892.

C. L. DANA, M.D., PRESIDENT, IN THE CHAIR.

A Neurological Outlook was the title of the President's address (see p. 126).

Researches upon the Etiology of Idiopathic Epilepsy.—DR. C. A. HERTER, of New York, read a paper on this subject. The speaker had, during the past winter, undertaken to study the relation of uric acid excretion to the epileptic paroxysm, a line of inquiry brought to notice by recent publications of Haig, an English writer, who believed that the *grand mal* seizure was determined by an excessive accumulation of uric acid in the blood. The speaker's results were not confirmatory of the view by Haig. Certain observations, however, of another kind had suggested the possibility of a causal relationship, in some cases, between putrefactive processes in the intestine and epileptic seizures. The possibility of this was suggested on considering that in cases of epilepsy the symptoms of disordered digestion were associated with an unusual frequency of the seizures. Certain substances in the urine, namely, the ethereal sulphates, had been shown to be derived from putrefaction in the intestine, and the extent to which such putrefaction occurred might be inferred from the quantity of these substances in the urine. These substances had been studied in thirty-one different cases of epilepsy, most of the cases being unquestionably idiopathic in nature, according to the generally accepted meaning of the term. In the majority of these cases the uric acid excretion also had been studied. Of the thirty-one cases of epilepsy, *grand mal* seizures were the distinctive features in twenty nine. In the remaining cases there were very frequent *petit mal* seizures. In the cases of *grand mal* the excretion of uric acid before the seizure had only in rare instances varied from the limits of health, whereas, in general, it might be said that the urine passed after a seizure was apt to have a higher uric acid ratio than the urine before or about the time of the seizure. This was to be regarded as a consequence of conditions which had determined the seizures, or possibly to the seizures themselves, but could not reasonably be construed as the cause of seizures. In the *petit mal* cases a continuously high uric acid excretion had been observed and appeared in some way to be related to the cause of the seizures. It was found in two cases of this type that when the excretion of uric acid was reduced, the seizures were greatly reduced in frequency. As to intestinal putrefaction in epilepsy, of the twenty-nine cases of *grand mal*, twenty-one of them showed unmistakable evidence of excessive intestinal putrefaction. Furthermore, a large proportion of the cases in which the observations were of such a character as to render a comparison possible, showed at least a general correspondence between the seizures and the degree of intestinal putrefaction, as gauged by the analysis of the urine. As regarded the possible dependence of these results upon any peculiarity in the diet of the patients, it might be said that no peculiarity existed. Their non-dependence upon the influence of the bromides was less easy of demonstration, yet, for reasons which seemed to be satisfactory, the speaker thought it highly improbable that the bromides were responsible for the evidences of putrefaction.

DR. B. SACHS thought, that despite the excellent work done by the reader of the paper, the mystery which had surrounded the etiology of idiopathic epilepsy still remained.

DR. E. D. FISHER had seen some of the cases referred to and thought that the clinical facts tallied with the conclusions so far deduced by the author of the paper.

DR. F. X. DERCUM asked if there were any facts which would go to prove that the ethereal sulphates were really irritative in their action.

DR. HERTER replied that as yet no experiments had been made with a view to determining this point, but the evidence suggested a relationship of the kind mentioned, though it was not as yet proven.

DR. WHARTON SINKLER cited, as illustrative of the action of putrefactive changes in producing epileptic attacks, the case of a patient who as a rule had a seizure every two or three months, but who had found that such attacks could be frequently warded off by active purgation.

DR. RIGGS said that in the use of antiseptic agents he had found the addition of naphthol and charcoal to the salicylate and sulphate of bismuth valuable in reducing the putrefactive changes of a nitrogenous diet.

DR. HOBSON thought it was a question whether the presence of ethereal sulphates might be regarded as a cause or effect of the epileptic condition.

DR. H. A. TOMLINSON emphasized the fact that keeping the bowels open and taking a proper amount of exercise insured to the epileptic fewer convulsions and a less uncomfortable existence.

DR. HERTER said that these substances acted not as a primary cause, but as irritants upon a predisposition. It was important to distinguish between the relation of uric acid excretion and the excretion of the ethereal sulphates. It had been determined by observation that the proportion of uric acid was largely increased after an epileptic seizure, reaching the maximum one or two days after the attacks. The ethereal sulphates were, on the contrary, increased at the time or immediately before.

Sleep Movements of Epilepsy.—DR. J. W. PUTNAM, of Buffalo, read a paper with this title. When there was no history of cranial injury in a case of epilepsy, we often got a history of the character of the attacks, and upon this history of the aura and the muscles first convulsed we were obliged to rely for our localization. Owing to the nature of the disease, dependence had to be placed upon the observation of others in regard to preliminary movements, and it was often difficult to obtain clear and positive statements concerning these. Last fall the speaker had a patient who was at that time having a convulsion almost every evening, and while waiting to observe an attack he had noticed a peculiar movement of the left arm, which was different from the ordinary purposeless movements of restlesss sleep. The speaker thought that a series of observations of epileptics during sleep might show movements which might be of localizing value. Hughlings Jackson had assumed that there were three levels in the motor nervous system: the highest, chiefly motor, was the frontal lobes; the middle level was composed of the portion which we understood as the motor region, comprising the ascending frontal and parietal convolutions and the corpus striatum; the lowest level consisted of the cornua of the cord, Clark's column, and Stelling's nucleus. Starting with this theory the speaker ventured the following explanation: When the patient was in a profound sleep, all these levels were in a state of functional rest, and we had a quiet sleep undisturbed by movements, as no stimulus was transmitted to the muscles. In a less profound sleep he had assumed the highest level to be at rest and no longer exerting an inhibiting control over the middle level. This in a healthy person would show itself by general restlessness. In an epileptic in whose motor region there was an irritated area of greater excitability than normal it was assumed that it was less profoundly asleep than other areas. Hence, in such conditions we might have pronounced and definite movements occurring during sleep and limited to the limb controlled by the irritated area.

DR. J. J. PUTNAM thought that in epilepsy, as a rule, the lesion consisted of diffuse sclerotic changes acting diffusely, as did poisons. The focalized expression of these changes indicated that certain portions of the brain were, or had become, relatively more influenced by the

morbid changes. Operative procedures were not likely to succeed if this theory was correct. He should be disinclined to operate for localized movements occurring during sleep.

Dr. Sachs thought that sleep movements might point to the fact that the centre governing the part moved in sleep would be more irritable than normal. He was reluctant to attach too much value to the sleep movements as a symptom.

Dr. J. W. Putnam did not think it would be justifiable to have operations undertaken upon observations of the sleep movements alone. Still he thought they indicated the seat of irritation, and hence there was added one more strand to the rope of evidence.

The Seat of Absinthe Epilepsy.—Dr. Isaac Ott, of Easton, read a paper on this subject. Anatomy had, as yet, been of little service in revealing the seat of epilepsy, but much more had been accomplished by physiology in the elucidation of convulsive phenomena. The speaker reviewed the various experiments that had been made from time to time in localizing convulsive movement, but dwelt especially upon the absinthe tests. One observer had found that after injection into the jugular vein of two drops of essence of absinthe, there followed these conditions: The facial muscles began with a single clonic spasm passing into a state of tremulous tonic spasm. This order of convulsion passed rapidly down the body, until the tonic spasm in the limbs was extremely marked. After a short period, tonic spasms gave way to a long series of clonic twitches. Accompanying these convulsive phenomena there was a profuse salivation and sometimes escape of urine, while in cases in which narcosis had not been employed, unconsciousness and coma were early symptoms. The effect upon the cord was also tested by means of the galvanometer and the electrometer. The results showed that the employment of absinthe gave maximal electromotive effects in the sciatic nerve through the overwhelming discharge of the highest cortical centres. It was also observed that absinthe caused an additional electric excitation of the centres, producing more energy. A number of facts proved that the seat of origin of tonic and clonic movements in epilepsy was in the cortex, and their expression took place mainly by means of ganglia seated in the pons. That clonic convulsions could be observed even after removal of the brain in front of the pons was proven by the author in one case, in which the injection of essence of absinthe produced violent clonic spasms. The word cortico-pontal might express the origin of convulsive epilepsy due to absinthe.

Separate Provision for Epileptics, both Public and Private.—Dr. Henry R. Stedman, of Boston, entered a plea for the exclusive care of epileptics in special establishments, on the colony plan, throughout the country. The amelioration, by proper medical supervision in surroundings, where their lives could be regulated, their capabilities in the way of employment developed, seemed not to attract the attention it ought. That this was practicable, the colonies for epileptics in other countries, particularly in Germany, had rendered an assured fact. The speaker gave a short account, illustrated by charts and views, of the famous epileptic colonies at Bielefeld, in Germany, which he had recently visited. He closed his remarks with the hope that some step might be taken in this country to establish like institutions.

Dr. Bullard said that in Massachusetts steps had already been taken to further the establishment of suitable special institutions for the care of epileptics. A bill has been prepared by a special committee and presented to the proper quarter. It was hoped and believed that next year this bill would be passed and the money forthcoming to secure the end in view.

Dr. Frederick Peterson urged the necessity for energetic support of the measures already taken in New York State, and said that if the hopes of those interested were realized, a very large number of epileptics would have opportunity for instruction and of leading useful lives.

Dr Fisher said he hoped the movement would meet with every success. He did not know a more helpless, hopeless set of human beings than these epileptics, fed on bromides and without occupation.

Dr. William M. Leszynsky asked if it was intended to include the care of the cases of chronic epileptic insanity. He should think these formed an undesirable class to colonize with the ordinary epileptics.

Dr. Tomlinson said there was no more unsatisfactory class of patients in institutions for the insane than the epileptics. Not one of these institutions was suitably equipped to care for them. If they were associated with the violent and demented, their lives were rendered still more uncomfortable.

Dr. Sachs was in favor of provision by the State for these patients, but thought that much must be done by private endeavor. Many of the younger epileptics among the well-to-do had no opportunity for proper education. It had seemed to the speaker that for these there should be provided private institutions, where it would be made an object to give distinct educational advantages.

The President said he had made some investigations in the matter. He did not believe that there should be any State provision for epileptics, at least not at present. There were now an enormous number of defective institutions under political influence. If there were added sixteen thousand epileptics to the fifteen thousand insane, the condition of the former class would be by no means benefited. While the institutions for which Dr. Stedman pleaded were undoubtedly needed, effort should be made toward interesting private citizens in their support.

Dr. Stedman said that it would, of course, not be wise to associate the violent cases of epilepsy with those of the milder class. Buildings could, however, be provided on the colony where the severe cases could be cared for. He agreed as to the desirability of charitable work in the scheme, but it seemed difficult to effect the desired end in this way from the very great lack of interest in this unfortunate class, and it was only by State care that there was hope of benefiting them.

The President thought that a direct opinion on the subject by the Association might bear weight with the Legislature, and hoped that some such expression would be formulated. The following resolution was, on motion of Dr. Stedman, then adopted: "That it is the unanimous sense of the American Neurological Association that the proper care of the epileptic class, so long delayed, be urged upon the public, upon State authorities, and especially upon all interested in the care of the sick and defective poor, whereby they may be relieved from asylums and almshouses, and may receive the required care in such separate establishments as their deplorable situations demand."

A New Symptom Indicating Combined Cerebellar and Spinal Inco-ordination.—Dr. E. C. Spitzka, of New York, reported the case of a child whose attitude and appearance were characteristic of that form of pseudo-hypertrophic paralysis in which the atrophy of the arms markedly ante-dated wasting in the lower extremities. Whether dressed or undressed, under examination and observation or not, the patient had a habit, with his right hand, thumb and fingers flexed, the fingers but slightly so, of making a sudden motion toward the nose, while at the same time there was a straightening out in his attitude as if all the muscles involved in maintaining the erect posture were associated in the act. A peculiar expression would cross his face, the head and eyes being turned toward the approaching fingers. The child had also certain imperative conceptions, such as the fear of going under a certain tree, a terror of a Newfoundland dog at the later hours of the day, which at other times he showed a great affection for. He had also a fear of the stairs, and even on the level floor of the house he had an impression as of a yawning precipice. The mother had informed the speaker that there

were three members of her husband's family in insane asylums. The child had progressed as these cases usually did, had developed a more marked grade of imperative conceptions and morbid fears, and a slight grade of imbecility.

A Further Contribution to the Pathology of Arrested Cerebral Development.—Dr. B. Sachs, of New York, read a paper with this title. The patient who was the subject of the paper was a sister of a child whose brain the speaker had reported upon five years ago. The history of the case was as follows: The child when first seen was thirteen months old. It was born at full term, a perfectly healthy infant, was nursed at the breast, and had appeared to be developing finely until the age of eighteen months; from that time there had been steady retrogression. Close examination showed that the child could not hold up its head, nor could it sit up unless supported; it had no perception of light, and the pupillary light reflex was entirely gone. There was slight sense of hearing, but it could not distinguish between sounds. There was some spastic condition of the upper and lower extremities, but no spontaneous movements of any sort, the child sitting listlessly on the nurse's lap. The knee-jerks on both sides were distinctly exaggerated, no ankle clonus was obtainable, the plantar reflexes were increased. The condition had grown steadily worse, and the child had died of extreme marasmus at the age of twenty months. A week before death there had been considerable fever and several convulsive seizures, but these were the only ones that had occurred during the entire course of the disease. An autopsy was performed twenty-two hours after death. There was no evidence of latent specific disease. The skull was symmetrical, of good size, but unusually thin; the fontanelles were closed, but still transparent. The dura was adherent to the skull, so that the brain had to be removed with the calvarium. The brain was firm to the touch, almost as hard as a brain that had been in Müller's fluid for some weeks. The pia could be easily detached, and the cortex, though pale, presented no unusual appearances. The cord presented no abnormal conditions. Very careful microscopic studies were made of sections of the ganglia, pons, medulla, and cord. The chief changes, and very marked ones, were found in the cortex, in all of its regions to an equal degree. In all of the sections examined not a single normal pyramidal cell could be discovered. The cell-bodies were altered either in shape or in general appearance; the cell nuclei and the nucleoli were distinct enough, but were surrounded by an altered cell-body which did not properly take the ordinary stains. The neuroglia cells appeared somewhat increased and the tissue rather dense. The blood-vessels were present in at least the usual proportion, most of them being filled with blood, but there was no sign of any active inflammatory condition. Comparing the results of examination in this case with the facts published a few years ago, that the arrest of cerebral development was practically an arrest of cortical development, a true *agenesis corticalis*, was made out, but by what immediate force it was brought about it was difficult to say. In the case of the other child whose sister this one was, the history of traumatism during pregnancy was looked upon as a possible cause, but in the present instance that factor was wanting. From the results of the two autopsies it might be claimed that the chief morbid changes underlying that form of idiocy which was associated with blindness, and which led to a prompt and fatal termination, was to be found in the cells of the cortex. This case could hardly be dignified as a distinct type of disease, but it represented the most pronounced form of idiocy and of arrested cerebral development.

Report upon the Surgical Treatment of Epilepsy.—Dr. Sachs also gave a record of his joint experiences with Professor A. G. Gerster in the surgical treatment of epilepsy. The cases operated upon were selected with considerable care. They were either of distinctly traumatic origin, or such in which a strictly localized convulsion pointed to a limited focus of disease. Cases of general epilepsy of non-traumatic origin were not subjected to operation. In regard to the determination of the brain areas to be operated upon, it was the custom to map out upon the skull with the greatest care, in advance of the operation, the exact site of the various divisions of the motor areas. The speaker was now of the opinion that in most cases this was quite unnecessary, and that the application of the faradic current to the dura would help to localize centres much more accurately than any of the customary rules. The first and most notable result of the operations, as recorded by these observers, was that they could not claim a single decided cure. In several of the cases there had been a marked diminution of the attacks immediately after the operation; in some the improvement had lasted a few months, but in every single case the attacks recurred after a lapse of several months, or even less. If we sought for some special reason why operative procedure had accomplished so little, it was to be found in the fact that they came under notice after the epilepsy had been established for many years. It was now generally conceded that, though a focus of disease was the actual cause of the epilepsy, this epilepsy did not manifest itself as a rule until widespread changes had appeared throughout the entire brain. The time that elapsed between the infliction of the initial lesion and the development of these secondary changes corresponded quite accurately with the period of time between the traumatic injury, or the initial disease, and the development of epilepsy. The excision of the cortical tissue after the establishment of epilepsy seemed to be of questionable merit. The only hope from surgery was in the prompt interference, in all cases of traumatic injury to the skull, to remove the focus of disease before secondary changes had been set up.

Dr. Mills had reported two cases at certain periods after operation, and in one the result was absolutely valueless. In the other the patient, up to the time the speaker had last heard of him, ten years after the operation, had had no return, but even before the operation the patient had had but few attacks, and the disease had existed only a very few months.

Dr. J. J. Putnam thought that while something ought to be done, in early infancy, to remove diseased portions of the brain, there was evidence wanting that epilepsy would be thereby prevented.

Dr. P. C. Knapp had not seen any beneficial results from the treatment. From local injury there supervened a localized epilepsy, due however to changes in the brain, and he believed that in many of these cases, by the time the first convulsion appeared, there were already extensive changes in the brain itself.

Dr. Sachs said that in the event of any difficulties being met with in obtaining local muscular contractions upon faradization of the dura, there must be some mistake in the technique. It was a fact that through the dura there could be produced a series of single contractions of just these parts, the centre of which it was desired to excise. This could be done upon man just as well as upon the brain of the monkey. Dr. Knapp had spoken of localized convulsion due to the general changes in the brain. The speaker did not entirely agree with this view, but thought it more likely to be localized convulsion due to localized lesion. It was a question whether operation promised much, even in traumatic cases, unless undertaken in the earliest possible stages.

Some Contributions to the Muscular Sense.—Dr. G. J. Preston, of Baltimore, read an interesting paper with this title, which he summed up in the following conclusions: 1. The posture sense was composed of afferent impulses derived from muscles, tendons, articulations and their coverings, and bones. 2. It was independent of, and separable from, general tactile sensibility, and possibly could be distinguished from the other members of its class, as the pressure sense, for example. 3. The

course of these impulses through the cord was almost certainly by means of the posterior columns. 4. They probably passed into the corpus restiforme and cerebellum. 5. In all probability they passed through the anterior portion of the posterior third of the posterior limb of the internal capsule, occupying an intermediate position between the motor and sensory fibres in this region. 6. Without positive data on either side, it would seem most probable that the centre for the posture sense was located in one of the cell-layers of the motor cortex.

The Extent of the Visual Area of the Cortex in Man.—Dr. H. H. Donaldson, of Worcester, made some remarks on this subject. He spoke of the post-mortem findings in the case of Laura Bridgman, who had lost the power of vision in the left eye at the age of twelve, and said that a study of cases in which the sense organs had been lost in early life, as also in animals where they had been experimentally removed, might materially aid in marking the sensory areas.

The Criminal Brain Illustrated by the Brain of a Murderer.—Dr. Donaldson also read a paper on this subject. He said that a specimen obtained from Dr. Van Gieson had been examined, with a view to determine whether it corresponded with Benedict's notion, that confluent fissures were characteristic of criminal brains. Examinations of this particular brain, that of a murderer of undoubtedly criminal characteristics, showed that it did not correspond with the type as described by Benedict. Giacommni had determined by comparison that there were more confluences in normal brains than in those of criminals. If increased fissuration was a criminal characteristic, this, other things being equal, implied an increase of gray matter, and, therefore, low-type brains might be said to have proportionately a larger amount of gray matter. Undoubtedly, the criminal brain could be picked out of a mixed lot, but only by virtue of general characteristics, and there could be no certainty that all criminal brains could be thus selected. The characteristics of degeneracy, such as were to be found about the rest of the body, were not as yet sufficiently marked to be expressed in a systematic manner.

Dr. Collins said that, from a somewhat limited experience at three or four autopsies on murderers, he was not prepared to say that there was a criminal brain, although there were often found fissural and gyral peculiarities which merited study and observation. In the autopsy on a murderer who had lost his life in attempting to take that of a New York financier, the speaker had found really remarkable structural changes, and whether these were the result of retrograde changes during life of the murderer, or an inherent structural absence from the beginning, he could not say. The fissure of Rolando was very shallow, the gray matter thinner than normal, the ascending parietal convolution was small, and the entire left hemisphere gave an idea of changes from the normal in conformation. Further careful comparisons between the brains of the known criminal class with those of a known high order were necessary before any valuable conclusions could be drawn.

Dr. Charles K. Mills believed that there were many misconceptions on the part of those who criticised the observers who had reported aberrations and irregularities in the brains of criminals. No one believed that all criminals presented a brain anatomy that would enable them to be ranged under a special type. Criminals belonged to very different classes. A criminal type of brain could be expected from those who were victims of a bad heredity or very early arrest. Paranoiacs, criminals, idiots, imbeciles, those generally who were victims of arrested or abortive development would probably present brain abnormalities even of a gross kind. The brain shown by Dr. Donaldson exhibited what seemed to him to be evidences of aberration, particularly in the parieto-occipital region. The subject was one, however, that could only be settled by careful and prolonged investigation.

Dr. Knapp had nothing to say as to the anatomical conditions, but he wished to support Dr. Mills's view as to the distinction between criminals. It was as vague to speak of a criminal brain as it would be to speak of an insane brain, classing together indiscriminately mania, melancholia, paranoia, and general paralysis.

Description of a Chinese Brain.—Dr. F. X. Dercum, of Philadelphia, gave the record of such an examination. In all of the brains of Chinese so far examined by the speaker, an unusual tendency to transverse or perpendicular fissuration was present. There was also unusual sinuosity of the fissures. Of the gross peculiarities, there was a marked obliquity or eversion of the basal surface of the frontal lobe. In both of the previously described specimens of the writer's complexity was given to the frontal lobes by the appearance of well-marked medifrontal elements. In the present specimen an added frontal fissure was present on the left lobe, but it was comparatively short, and in the right lobe traces of it only were found. In both of the former specimens the cuneus and the occipital lobe were noted as rather small; this held good in regard to the present case. In conclusion, these brains, owing probably to the unusual sinuosity of some of the fissures, together with the excessive transverse fissuration, had a physiognomy, as it were, of their own. They certainly, in general appearance, looked different from the average white brain and also very different from the brain of the negro.

The Association of Hysterical Trembling and Anorexia Nervosa.—Dr. James Hendrie Lloyd, of Philadelphia, read a paper on this subject. He reported the case of a young woman who had been first observed at a remote farm-house in Pennsylvania. She had then been ill for two years. She was suffering with a peculiar rhythmic, constant tremor, which was, however, not paralysis agitans. The tremor occurred in waves of exacerbation and opisthotonic spasms every minute or so. The patient had hysterogenic zones, pressure over which caused the spasm. She had also the condition described by Gull as anorexia nervosa. By a mistake a large dose of ordinary saltpetre had been given instead of sulphate of magnesia. While no harm had directly resulted from this error, the mental disturbance had been such that regurgitation of food had set in, and this had become the most pronounced complication in the case. The patient was found lying upon her side with cloths under her chin to catch the regurgitated material. She was emaciated to the last degree. There was no atrophy, but simply inanition. This condition was followed by true hysterical retention of urine, lasting sometimes for two days. After the patient had been removed to an hospital the tremor had greatly subsided and the regurgitation of food had entirely stopped.

Dr. Riggs cited the case of a woman under his care believed to be suffering from hysterical tremor. It was peculiar in that the attack came on only during the morning hours. He was unable to find any of the stigmata commonly present. There was persistent nausea and continuous headache. Under the usual therapeutic measures the patient had steadily improved.

Dr. Weber said that these patients did not really swallow, at least the food did not pass into the stomach. If food was passed into the stomach through a tube, they did not vomit.

Dr. Preston said it was necessary to distinguish between hysterical tremor and the nervous trembling of Charcot. In a case of his, of hysterical anorexia with nervous tremblings at intervals, the patient had lost fifty per cent. of body weight.

Dr. Mills thought it important to determine that the tremor or abnormal movements were not purely hysterical, or associated with melancholia or some organic disturbance. A diagnosis of the hysterical character of the tremor was to be made chiefly from the association of other hysterical conditions. As to the prognosis, many of such cases would outlast the medical observers.

Dr. Sachs said that as pronounced cases of hysterical anorexia, with trembling, were to be met with here as in Paris. He cited the case of a young woman who had refused absolutely to take food on the plea that she could not swallow. Efforts were made to administer food by force, but she would keep a large mass in her gullet and then go into a corner of the room and eject it. When fed she would gag and regurgitate a little, but it was believed that it was not true vomiting. The male hysterical patients were much more difficult to handle than the female. He believed that the majority of these patients did swallow, and the best proof that they were not without food lay in the fact that they increased in weight in spite of the assertion that no food was taken. He believed that few of these cases of hysterical anorexia would be found to resist cold water, applied under considerable pressure.

Folie à Deux, with Remarks on Similar Types of Insanity.—Dr. C. K. Mills presented notes on two cases of this disease. The two patients were sisters, the eldest thirty-two years of age, the other less than two years younger. The father was a hard-drinking, quarrelsome man. The first patient had been deranged for three or four years. She had complained of strange feelings, as of something growing in her abdomen, of sickness of the stomach, bloody passages, chills, and other unpleasant sensations. She had been troubled for a long time with strange voices. She was tormented by people both at her work and at home, and was made to say very ridiculous things. She apparently had hallucinations of several senses. A stench of blood came up through her throat; at times she was grasped by a hand. Men would appear before her, and sometimes they would get on their knees and solicit her. She was full of sexual delusions with reference to men and their designs upon her. The heads of men would appear before her at her work. When she did not see them, sometimes she would feel them or hear them; often she heard their voices talking with her after midnight, saying all sorts of filthy things.

The other patient's mental disturbance had come on a few weeks after that of her sister. Apparently the delusions of the first had, to some extent, been imposed upon or communicated to the second. Besides having various physical symptoms, the second patient, who seemed to be weaker both mentally and physically than the other, told the most filthy stories. She said that she knew who the men were that were abusing her. These patients had evidently become a nuisance both at their home and in the neighborhood. They appeared to believe firmly in what they said, and yet, at times, to appreciate that something was wrong with their heads. They eventually went quietly and without resistance to a hospital for the insane, thinking, apparently, that they might be able to get their troubles straightened after they got there. They presented, as is not unusual, a blending of the characteristics of the three forms of folie à deux, that is of the imposed insanity, the simultaneous insanity, and the communicated insanity. The influence of heredity was decided; the delusions were persecutory.

Rapidly Fatal Motor and Sensory Paralysis, with Acute Myelitis of the Dorsal Cord.—Dr. Mills reported a case of this nature. The patient, a man thirty-seven years of age, with an uncertain specific history, six months before coming under observation had had a large carbuncle between the shoulders. For months he had shown some tendency to drag his feet. For two weeks he had had pain and soreness nearly in the line of the right nipple, which extended later into the armpits and down the inner side of the arm. Four days before he was first seen he had developed a severe pain across the loins. The next day he was barely able to walk, and in thirty-six hours he could not stand. Twenty-four hours later he was completely paralyzed as to motion in both lower extremities, and showed also total loss of sensation as high as the nipples. He had incontinence of urine and fæces. Knee jerks, muscle-jerks, and cutaneous reflexes were abolished. This extreme paralysis was fully developed three days after the first symptom of motor loss became marked. His temperature rose rapidly to 104° and 105° F., with corresponding increase of pulse and respiration. He died one week after coming under observation. At the autopsy the vessels of the spinal pia were markedly distended with blood. On section the periphery of the cervical cord was of good consistence, but the centre was much softened. As the sections were made lower down the transverse area of the softening increased, until in the dorsal region only a shell of solid tissue surrounded a creamy mass. The softening grew less again in the lumbar region. Below the right groin was a swelling which contained broken-down glands and pus. Other organs and parts were found to be normal. Microscopical examination showed, in the dorsal region, the nervous tissue almost entirely destroyed. The blood-vessels were distended, and there were many scattered hemorrhages. Hemorrhages were also present in the pia and in some of the peripheral nerve-roots. The upper part of the cervical region was very little affected, and the lumbar much less than the dorsal. The case was unquestionably one of rapidly spreading acute myelitis.

Exploratory Trephining and Ligation of the Vertebral Artery.—Dr. J. B. Deaver and Dr. Mills reported a case which they regarded as of unusual character, and probably unique. The patient was a boy aged eleven, who had, in December, 1889, commenced to complain of pain in the head and some stiffness of the neck. Other symptoms, which had developed slowly, were failing sight, spells of nausea, occasional attacks of violence or excitement, strabismus, staggering in walking (a little more to the left than to the right), a feeling of dizziness described as "going over," and shortness of breath. Before the operation double optic neuritis in an advanced stage was present. Hearing and taste were not impaired, there was no motor paralysis, nor was there disturbance of common sensibility. No nystagmus Examination showed a pulsating tumor in the occipital region, slightly protruding through a small opening in the skull, to the left of the occipital protuberance. A distinct thrill seemed to be present. Three scars were noted on the posterior aspect of the head, one just above and to the right of the opening. The opening in the skull was enlarged so as to examine the supposed aneurism which appeared to be in the line of the lateral sinus, but when this was done the character of the swelling was too uncertain to warrant them to go farther. An exploring needle was introduced, the withdrawal of which caused bleeding which required long pressure to arrest. Later the left vertebral artery was ligated, but with no beneficial results. After the operation the pupil on the side corresponding to the cicatrix was contracted. The patient slowly grew weaker and died several months after the operation. Autopsy revealed a gelatinous mass which had occupied much of the fourth vertricle, reaching from or into the middle lobe of the cerebellum and both cerebellar hemispheres. The ventricles of the brain and their horns were enormously dilated, and at several places at the base rupture had almost taken place into the cranial cavity. When the spinal cord was severed from the oblongata, the central spinal canal was found to be one-sixth of an inch in diameter, and from it much fluid escaped. The chief points of interest were the reference to the diagnosis of aneurism, the mechanism of the process by which the opening in the skull resulted, and the production of the hydrocephalus and hydrorachis.

A Case of Congenital Huntington's Chorea.—Dr. L. C. Gray, of New York, presented a man suffering from alleged hereditary Huntington's chorea. The disease had manifested itself in the same family during many generations. The movements and progressive muscular tremors appeared in this case when the patient had reached the age of forty-five. The man belonged to some branch of the Stamford County family. The speaker did not con-

sider the swaying and dancing movements in this case those of chorea.

Dr. Gray then showed a case in a child which he considered was one of congenital Huntington's chorea. There had been no similar trouble in other members of the child's family, and the general history was negative. The choreic movements had been noticed immediately after birth. The infant was a seven months' child. This disease showed itself generally between the ages of thirty and fifty, and this was the youngest case known to the speaker.

Dr. J. H. Lloyd thought that the so-called Huntington's chorea, which was clinically very similar to ordinary chorea, was dependent upon a different pathology. He had observed in Philadelphia a woman of eighty with senile chorea There was always an associated mental failure in those forms of adult chorea.

Dr. Sinkler said that a Dr. Stevens, of South Carolina, had reported a family in which there had been cases of chorea for several generations. The same observer had reported two cases in young adults, in whom the choreic movements had commenced in infancy, before the end of the first year. The case before them was certainly different from ordinary chorea, and was much more like spinal disease.

Dr. Collins had observed the case of a child of eleven in whom the movements, which dated from birth, were more characteristic than in Dr. Gray's case. In the patient before them the lesion was probably one of the medullary areas, and the choreic movements were associated with lack of development high up in these areas.

The President presented a case of hereditary chorea in a man, a native of Scotland, in whose family the disease had appeared through four or five generations. The speaker presented this case to show the effect of trephining. The temporary relief afforded by the operation in general paresis had suggested the probability of some such result in this case.

Dr Gray said that autopsies would not substantiate Dr. Sinkler's views as to the spinal origin of this disease. There were only one or two cases in which spinal degeneration had been noticed, and the lesions had been usually in the cerebrum, in the motor tract.

Traumatic Nervous Affections.—Dr. Philip Coombs Knapp, of Boston, read a paper on this subject. He held that there were various distinct affections of the nervous system due to injury, and that no one term such as traumatic neurosis could be applicable to all. The paper he said was an attempt at classification based on ninety cases. Pain in the back was present in fifty-six cases, trouble in the back was the chief disturbance. In the rest it was only a complication.

Five cases were due to direct injury to the cord, producing paraplegia. In four cases there were symptoms of insidious onset referable to the cord, paresis, vesicle disturbances, and slight spastic condition. Here it was thought that the changes were chiefly in the lateral columns. Thirteen cases were regarded as of more distinctly cerebral origin. Here the injury had been to the head, and the prominent symptoms were headache, vertigo, and loss of mental power. Other symptoms sometimes indicated a focal lesion, hemorrhage, fracture, or meningitis. Twelve cases were believed to have an organic basis, a diffuse sclerosis of the cerebral nervous system. Four of these had terminated fatally. Four others were thought to belong to this class, but they were classed as doubtful. The symptoms were pain in the head and back, loss of mental power, insomnia, muscular weakness, anæsthesia usually of general distribution and most marked in the legs, tremor, disturbances of micturition, and palpitation. In these cases the psychical element had little to do in the causation. In the functional conditions the psychical element was much more important. Twenty-six cases were classed as neurasthenic. In all cases of "spinal irritation," headache, insomnia, digestion disturbance, incapacity for protracted physical and mental effort, nervousness, hypochondria, melancholia, morning fatigue, etc., were prominent symptoms. A rapid pulse and an exaggerated knee-jerk were considered of some importance. Seventeen cases were classified as hysteria, and presented some of the symptoms, notably hemi-anæsthesia, on which the French lay so much stress. Most of them also presented symptoms of neurasthenia. Pure hysteria was very rare. Limitation of the visual field was common in hysteria, but was rare in other affections. Both this symptom and hemi-anæsthesia were of importance, but they were met with only in a small percentage of the cases. Successful simulation was believed to be extremely rare. The prognosis depended upon the form of disease.

Dr. J. J. Putnam thought that neurologists had a peculiar responsibility in regard to this subject, and it was his earnest desire that the question of prognosis should be tested in every way, and as large a series of cases as possible should be accumulated and classified, as to age, sex, and temperament. Much more light was needed before a judgment that was fair could be given. No expert had any excuse for not knowing practically all that had been discovered on the subject. There had been a serious accident at Roslindale, and the speaker had had special opportunities of observing the worst cases among those injured. Only a very small number of these would admit that they had entirely recovered. In the experience of the speaker the effect of treatment was good after a certain time in removing certain factors in the cases. He believed simulation to be of rare occurrence. Hypnotism, while likely to do harm if indiscreetly employed, was one of the edge tools the proper use of which would give good results.

Dr. Dercum thought that sufficient attention had not been paid to the existence of a certain group of motor symptoms in some of these cases. There was not only weakness amounting to absolute paralysis, but a condition of motor erethism, fibrillary tremors, spasms of the back muscles, and so forth.

The subject was further discussed by Drs. Tomlinson, Jones, Brill, and Mills.

Treatment of Syphilitic Nervous Affections.—Dr. E. C. Spitzka, of New York, made a few general remarks on this subject. Authorities on myelitis and other organic spinal disorders had not recognized the clinical difference between gummatous and acute vascular syphilitic affections of the spinal cord on the one hand, and tabes dorsalis on the other. There were two special diseases of the nervous centres which had more or less connection with syphilis. For instance, in locomotor ataxia, we know how frequently a history of syphilis occurs in the etiology of this disease; but the connection is not of the same kind as is found between the secondary and primary lesions of syphilis. The speaker believed in the existence of dementia, due to syphilis, which was not true paretic dementia. Emp rically, he stated that the more rapidly a central nervous syphilitic lesion was developed, the more rapidly fatal or radically curable it was. The more slowly developed disorders attributable to constitutional syphilis are amenable to carefully instituted antisyphilitic treatment in their early phases. If an established sclerosis be affected at all by the iodides or mercury, it is no more so than in non-syphilitic cases. Finally, the later the outbreak of nervous sequelæ, the less useful will the iodides be, and the more useful mercurial preparations and the associated baths. An interrupted plan of treatment, covering a long period of time, is more applicable to late cases than the energetic single course.

The Toxic Origin of Insanity.—Dr. Theodore H. Kellogg, of Flushing, read a paper with this title. Whenever a poison entered the human system, and through its presence directly or indirectly caused prolonged derangement of the mental functions, it was but reasonable to call the insanity toxic, and to regard the deleterious substance

as the exciting cause of the disease. It was true of this exciting cause, as of all others, that it would act only in cases having a native instability of nervous centre. The toxic agent might be vegetable, animal, or mineral. It might be generated as an organic virus in the bodies of others, or it might originate through metabolic tissue-changes in the patient himself, as in the auto-intoxications. The poisonous substance might gain access to the system through the alimentary canal, by the respiratory tracts, or through the cutaneous surface, and it might act directly on the cerebro-spinal centres or the sympathetic nervous system, or through pathological changes which it produced in the blood or the internal organs. The speaker said that the more common means of entrance of the poison were in adulterated food, impure water-supply, and the numberless exposures to noxious agents through special occupations. It was of interest to note that the action of these agents was often most persistent and continuous long after the exposure, and that the variation in effects of the same agent in different individuals was very great. This individual idiosyncrasy was well illustrated in the instance of alcohol, which by some was borne in enormous quantities, while in others the smallest amount would derange mental action. The speaker touched upon gout and lithæmia and their relation to psychic disturbances, and then referred to the auto-intoxicants, the ptomaines or leucomaines, which might cause mental disorders. A number of writers believed that autogenous poisons entered the circulation and acted directly on the central nervous centres with sufficient toxic force to produce mental disorders. He hoped that the day was not far distant when these poisonous alkaloids would be isolated and studied as to their physiological effects, and as to their antidotes, so that at the same time that mental derangement from a special toxic agent was diagnosed, the antidotal remedy for the disease might be suggested.

Dr. Tomlinson wanted to call attention to the fact that a toxic influence could not produce insanity of itself, but if produced, there must have been a pre-existing instability of the nervous organization. The instability might be hereditary or acquired. He looked upon insanity resulting from the misuse of narcotics and alcohol, as a manifestation of defective nervous organization, exaggerated by the toxic influence these substances had upon the organism.

The Sensory and Sensory-motor Disturbances Associated with Insanity.—Dr. H. A. Tomlinson read a paper on this subject. To study understandingly the nature of sensory and motor disturbance in insanity, it was necessary to erect a pathological framework, into which the various manifestations could be fitted more or less accurately; and as the absence of definite lesions in most cases left us no tangible pathological entity upon which to base our deductions, it became necessary to formulate an hypothesis, to explain the functional disturbances which originated and accompanied the perverted and excessive sensory and motor activity in these cases. This apparent absence of definite anatomical change, the speaker believed to be inherent in the conditions which gave rise to insanity, in the fact that the majority of cases of insanity, though furnishing widely different clinical pictures during the earlier manifestations of disease, existed as terminal dementia for a sufficient length of time before death to obscure any definite pre-existing lesion.

For convenience of study, the sensory and motor disturbances associated with insanity might be arranged as follows: Sensory disturbance of general sensation, including anæsthesia, analgesia, paræsthesia, and disturbed muscular sense; disturbances of special senses, including auditory, visual, olfactory, gustatory, and tactual hallucination; illusions, manifested by associated perversions, and lastly visceral hallucination; motor disturbance; tremor, local or general, automatic associated movements, paresis and paralysis, involving special muscular groups or general muscular function, vaso motor disturbance, spasm, and convulsion. Analysis of these different forms of disturbed functional activity seemed to lead inevitably to the conclusion that, even in their most complex manifestations, they were simply the outcome of increased or decreased irritability in the functional nerve-cell. The complexity depended upon the number of functional groups associated. As a summary of the arguments based on his hypothesis, the author thought that the following deductions were logical and warranted: The application of the theory of evolution to the study of the development of the nervous system and of the normal manifestation of its activities, furnished the best and most satisfactory basis for the study of the hereditary and acquired imperfections in its structure. In conclusion, he ventured the opinion that it was in the direction in which the theory of evolution led that we must look for future progress in the study of insanity and its associated disturbances, especially when its prevention and cure were the objects sought, and we must look to biology and physiology, rather than to pathology, for our guide in these studies.

Phthisis in Its Relation to Insanity.—Dr. Thomas J. Mays, of Philadelphia, read a paper with this title. Not only was phthisis more common among the insane than it was among the general population, but facts showed that this disease had a predilection for certain forms of insanity. Thus it was more likely to occur in the depressed than in the exalted types of insanity. Clouston says that this is especially true of melancholia when combined with the monomania of suspicion, and that sooner or later nearly all these cases die of pulmonary phthisis. The speaker's own observation led him to believe that general paralysis, or paretic dementia, was not infrequently associated with phthisis. The most superficial examination of mortality-statistics made it clear that the human constitution was more vulnerable to phthisis at certain periods of life than others, although it was true that those who inherit the disease died three years earlier than those who acquired it. Although asthma was a well recognized disease, its life history had not been investigated with the thoroughness that its importance demanded. The speaker thought that the facts tended to demonstrate that asthma was closely associated with consumption on the one hand, and on the other, that asthma was closely related to insanity. Notwithstanding the great advance in the modern study of the neuroses, the pathologic relationship between the lungs and their nerve supply had been practically ignored. The lungs were innervated by the largest and most important nerve in the body; yet, strange to say, nearly all of the diseases incidental to these organs were at present attributed to the influence of irritants and excitants introduced from without, and the possibility that the fault might reside in this nerve did not even receive serious consideration. The foregoing facts, the speaker thought, established the truth of the proposition that the link that bound pulmonary phthisis to insanity and to other neuroses was a disease of the vagi.

A Case of Akinesia Algera.—Dr. J. J. Putnam, of Boston, described the patients suffering with this condition as experiencing severe pain during or after use of the muscles. They were all neurasthenic. He had a case many years ago for which he had always desired to find some category, and to report when he found such category. He had supposed the symptoms were an exaggeration of those common to nervous patients. The patient referred to was, when seen by the speaker, a middle-aged man, and his trouble had existed since childhood, gradually increasing in severity. He had belonged to a family of nervous invalids. The symptom to which the speaker wished to call attention was excessive pain immediately following the use of the muscles. The man could not walk one-third of a mile without pain coming on upon cessation of exertion. This result was invariable. The pain was situated mainly in the legs, but if the arms were used he would suffer pain in them. There was no sign of any

atrophic changes, the man was well formed, had a delicate skin, and there was no other symptom present. The pain was diffused throughout the muscles of the thigh and below the knee. There was no tenderness.

Cephalic Tetanus.—Dr. J. J. Putnam also described a condition under this name which he says was rarely observed in this country. The patient, after having five teeth filled, had been seized with stiffness of one side of the face and neck. This was followed by spasms so severe that the teeth were ground together. The temperature was 101° F. After some six or eight weeks the symptoms had passed away, but as they abated the opposite side had become involved, but in a less degree. A surgeon who had seen the case thought it was not tetanus, but there was really no reason why the parasite might not have been introduced during the filling of the teeth.

Correspondence.

TO REPRESS EXPECTORATION IN PUBLIC PLACES.

To the Editor of the Medical Record.

Sir: The *Annals of Hygiene* for July gives an extract from the Medical Record, in which Dr. T. M. Prudden is quoted as speaking of the filth and contagion resulting from the American habit of expectoration, and which asks, "Shall we not have a society for the prevention of expectoration?" I should like Dr. Prudden, and the readers of the Medical Record generally, to know that the Women's Health Protective Association, of Allegheny County, has been fighting the spitting nuisance by organized effort for more than a year. By ceaseless importunity, we have induced the managers of the different street-car companies to post placards prohibiting spitting in all their cars, and a noticeable improvement in the condition of these vehicles has already been effected. The Pittsburg, Cincinnati & St. Louis Railroad, and the Allegheny Valley Railroad have placed similar notices in all their local stations, urging men not to spit upon the floor, and we hope that the other railways will in time follow their example. A notice especially prepared for us by the State Board of Health, calling attention to the diseases that are propagated through expectoration, has been neatly printed, and will be posted this fall in every public school-room in Pittsburg, and through the co-operation of the Superintendent of Public Schools the teachers will be instructed to give weekly talks to their scholars with this notice as a text. Forty thousand children will thus be taught not to spit in public.

We hope to get this notice posted also in theatres and other public places.

Our society was formed to agitate the subjects of street cleaning and garbage removal; but we found we could not ignore so conspicuous a violation of hygiene as the filthy and—in Pittsburg—universal habit of public expectoration.

We hope for the continued aid of the Medical Record on this subject. Articles like Dr. Prudden's are also a vigorous assistance to our cause.

Very respectfully,

Mrs. John M. Oakley, *Secretary*.

45 Sixth Street, Pittsburg, Pa.

Medical Journalism in Chili.—The *Revista Medica de Chile* has again begun to appear after a period of suspended animation which lasted for a year. The editor explains his "prolonged silence" by stating that "the persecutions carried on by the Dictatorship against the men of liberty also involved medical practitioners. . . . The shrieks of outraged liberty drowned the sweet voice of science." Several of the collaborators in the *Revista* were sent to prison or had to seek safety in flight, while others took an active part in the fighting, and in the clash of arms not only laws but medical reviews are silent.

New Instruments.

A RETRACTOR FOR AMPUTATIONS.

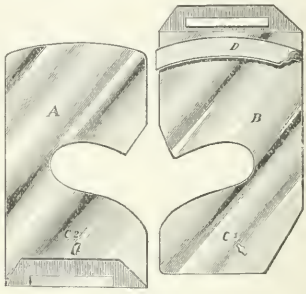
By E. J. Meyer, M.D.,

Buffalo, N. Y.,

Late House Surgeon Buffalo General Hospital.

The accompanying illustration represents a new instrument devised by me for the purpose of retracting the soft tissues previous to dividing the bone in amputations. It is intended to take the place of the various cloth retractors, which are, at their best, very unsatisfactory.

The instrument consists of two separate plates, A and B, united by means of a French lock, bearing curved slot C^1 and C^2, which, by bringing the plates nearer together, can be made to fit any sized bone at will, the instrument when united being made firm by one plate overlapping and fitting into the semicircular groove D.



The advantages of this instrument are as follows: 1. It is comparatively inexpensive. 2. It is readily rendered aseptic, because of its plain construction. 3. It affords a firm support for the bone while manipulating the saw. 4. It completely retracts the tissues, thus allowing a high division of the bone if desired, furnishing a protection of the tissues from bone-dust, and absolutely preventing any tissue laceration.

The retractor has been made for me by Stoddart Brothers, Buffalo, N. Y.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending July 23, 1892.

	Cases.	Deaths.
Typhus fever	3	0
Typhoid fever	28	14
Scarlet fever	55	7
Cerebro-spinal meningitis	2	1
Measles	219	21
Diphtheria	81	30
Small-pox	4	4
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0
Mumps	0	0

Death from a Trivial Accident.—The Hon. John Robson, Premier of British Columbia, died recently in London from pyæmia. While driving in a hansom cab, about ten days before, he had accidentally jammed his finger in the door and bruised it severely. A physician examined it but did not consider the accident a serious one. The finger did not heal well, however, and when medical advice was sought again the patient was found to be suffering from pyæmia, and died in spite of amputation of the finger.

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Original Articles.

DIPHTHERIA AND ALLIED PSEUDO-MEMBRANOUS INFLAMMATIONS—A CLINICAL AND BACTERIOLOGICAL STUDY.[1]

BY WILLIAM HALLOCK PARK, M.D.,

NEW YORK.

(Continued from page 122.)

Pseudo-membranous Inflammations in which the Klebs-Loeffler Bacilli are Never Present.—These will be considered in the following clinical divisions: 1. Extensive pseudo-membranes, mostly confined to tonsils, soft palate, and pharynx: *a*, Uncomplicated; *b*, complicating infectious diseases. 2. Pseudo-membranes involving larynx (as only two of these were complicated by infectious diseases they will be considered with the uncomplicated cases). 3. Pseudo-membranes confined to the tonsils.

Extensive Pseudo membranes, Confinea Chiefly to the Tonsils, Soft Palate, and Pharynx.—CASE I. February 5, 1892.—Polly D——, aged eight. Clinical history: Tonsils covered by large, irregular, adherent, whitish patches. Fauces and tonsils swollen, and livid in color. Temperature, 104° F.; pulse, 40; respiration, 20.

February 6th.—Tonsils, sides and tip of uvula, and faucial pillars covered by a thin, friable, grayish pseudo-membrane, which leaves a bleeding surface on removal. The appearance is as if on a mucous membrane denuded of its superficial epithelium a thick paint had been applied.

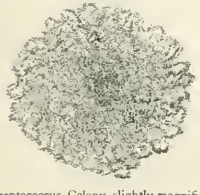
February 7th.—Tonsils and faucial pillars clear of membrane; superficial ulceration on pillars, and adherent membrane to uvula. Temperature remains between 102 and 104° F.; pulse, 118 to 130; respiration, 24 to 30.

February 16th.—Ulceration on uvula nearly healed. Temperature normal. No albumin in urine at any time. No great prostration.

[1] Through an error in last week's issue the descriptions under the sketches of colonies and bacteria were misplaced. They are given correctly below:

Surface Colony of Klebs-Loeffler Bacilli, on Agar Plate, slightly magnified; twenty hours' growth.

Klebs-Loeffler Bacilli, highly magnified.



Streptococcus Colony, slightly magnified; twenty hours' growth.

Streptococci, highly magnified.

Bacterial examination: Cultures were made daily from bits of membrane or swab, but never revealed any Loeffler bacilli. A quick-growing streptococcus which often appeared as a diplococcus was always the most frequent organism present.

CASE II. February 27th.—Charlotte V——, aged nineteen. Clinical history: Both tonsils, and adjacent surfaces of uvula covered by a thin gray membrane. Tonsils much swollen and painful. Great hyperæmia of pharynx. Temperature, 99.6° F.; pulse, 100. No albumin in urine.

February 29th.—All symptoms abated. Membrane disappeared. No swelling of glands.

Bacterial examination: Almost pure culture of streptococci growing in long twisted chains.

CASE III. February 3d.—Rose L——, aged sixteen months. Clinical history: Thin, adherent, semi-translucent membrane on tonsils and adjacent surfaces of uvula. Nostrils occluded, but no membrane visible. Croupy voice and breathing. Slight swelling of glands of neck. Temperature, 100.2° F.; pulse, 136; respiration, 34.

February 4th.—Membrane nearly disappeared. Child nearly well.

February 6th.—Throat perfectly clean. Child is well. Evening temperature, 100° F.; pulse, 118; respiration, 28.

Bacterial examination: Almost pure culture of a streptococcus growing in long chains. A few colonies of a short-chain bacillus.

CASE IV. March 14th.—George M——, aged four years. Clinical history: Five days ago both tonsils removed. Now, on depressed stumps of tonsils, on anterior pillars, and on adjacent surfaces of the uvula is a very thin grayish membrane. Complains of sore throat and not feeling well.

March 8th.—Membrane has disappeared.

Bacterial examination: Plates and tubes gave a pure culture of a rapid-growing streptococcus, often appearing as a diplococcus.

CASE V. March 25th.—Woman, aged twenty-four. Case from Presbyterian Hospital. History of sore throat and pseudo-membrane for a week. Clinical history: Pharynx and tonsils swollen and livid red in color. Considerable pain on swallowing. Thin, flaky, whitish pseudo-membrane on the sides of the uvula, extending up a short distance on the soft palate, where the swelling has caused creases of the tissues, also similar-looking patches on the tonsils and pharynx. Temperature range, 100 to 101.5° F.

Bacterial examination: Many colonies of the long-chained streptococcus.

CASE VI. February 6th.—Margaret M——, aged twenty months. Clinical history: Uvula and lateral walls of pharynx covered by thin, adherent patches.

February 8th.—Still remain on uvula. Temperature varies between 99 and 101° F.

February 11th.—Throat clean.

Bacterial examination: Cultures reveal many colonies of the long chained streptococcus.

This case has an extremely interesting history. The child was exposed to scarlet fever for three hours just before its admission to the diphtheria wards of the hospital. On the eighth day the child developed scarlet fever. In two other cases, with similar throats, the children showed slight desquamation and are therefore con-

sidered as complicating scarlet fever. In this case the history excludes such a supposition.

Case VII. February 3, 1892.—Gussie G——, aged nineteen. Clinical history: Hyperæmia of whole pharynx and tongue. Adherent thin grayish-white membrane on sides and tip of uvula. A few small grayish deposits on left tonsil. Temperature, 101° F.; pulse, 98. On fifth day, no membrane; feels well; sixth day, discharged. Temperature, only on two days above 100° F. On the fourth day, trace of albumin in urine.

Bacterial examination: Cultures contained no colonies of the Loeffler bacilli, but many colonies of the long-chained streptococcus.

Case VIII. February 3d.—Jennie K——, aged eighteen. Clinical history: Thin adherent pseudo-membrane on sides and tip of uvula. Some hyperæmia of pharynx. Temperature, 101.4° F.; pulse, 100. Membrane remained four days. After the first day, temperature and pulse sank to the normal, and patient did not appear sick. No albumin in urine. Discharged on the sixth day.

Bacterial examination: Cultures revealed many colonies of the long-chained streptococcus and numerous others of various forms.

Case IX. February 2, 1892.—Mary D——, aged twenty-one. Clinical history: For the past three days, pain on swallowing and on opening mouth. Posterior half of left tonsil, and post pillar, and most of uvula, covered by a thin grayish-white membrane, easily removed, leaving only a few bleeding points. No appreciable ulceration. Temperature, 102° F.; pulse, 108; respiration, 26. Glands of neck on left side swollen.

February 25th.—Still thin white membrane on both tonsils and adjacent surfaces of uvula.

Bacterial examination: Plates and tubes gave a pure culture of the streptococcus.

Five other cases gave histories and lesions so similar to the above that it seems needless to give them in full.

Summary.—These fourteen cases present such uniform clinical appearances and histories that they deserve to be considered by themselves. The ages ranged from twenty months to twenty-one years. In no case was any clear history of infection obtained, or of exposure to scarlet fever or measles. The considerable duration, three to eleven days, averaging five days, is important.

In these cases there is first a redness and swelling of the mucous membrane of the pharynx, tonsils, and fauces, with later a thin purulent discharge. Cultures at this time reveal very abundant colonies of streptococci. The epithelium of the inflamed mucous membrane, where the irritation is intensified by the contact and friction of adjacent surfaces, becomes necrotic, and the denuded surface becomes covered by a thin pseudo-membrane, composed mostly of streptococci held together by a small amount of fibrin. The streptococci may also penetrate into the denuded mucous membrane.

If one looks at a well-marked case, having the patient open the mouth slightly, and depresses the tongue just a little, one will notice the inflamed uvula lying between and against the swollen tonsils. On the portions of the uvula thus irritated by contact, on the faucial pillars lying against the tonsils, and, in extreme cases, on the lateral walls of the pharynx and on the soft palate spreading up from the sides of the uvula, one finds this pseudo membrane which is always light grayish in color, thin, and friable. On removal, a bleeding surface is disclosed. When astringent applications are not used, the membrane usually disappears gradually, and does not scale off in firm pieces of considerable size, as in many cases of true diphtheria.

In none of these cases was there a fatal result; neither great prostration, after-emaciation, nor paralysis. Except that these cases were never complicated by suppuration of the cervical glands and diffuse cellulitis, they otherwise appear to be the same as the pseudo-membranous inflammations complicating scarlet fever, the greater severity in the latter being probably due to the influence of the scarlet fever. The temperature curve varied greatly in the different cases. In these fourteen cases the bacteriological diagnosis was of great value in prognosis, for pseudo-membranes, so extensive in true diphtheria, would have made it grave.

Pseudo-Membranous Inflammations Complicating Scarlatina.—Confined chiefly to tonsils, soft palate, and pharynx. Seventeen of these cases were repeatedly examined. Except for complications, these gave exactly the same clinical appearances as those not complicating infectious diseases. Only six illustrative cases will be given.

Case I. February 29th.—James F——, aged two and one-half. History of scarlatinal rash. Died. Clinical history: Slight desquamation on hands. There is a thin, gray, adherent membrane on tonsils. Temperature, 100° F.

March 3d.—Thin, clean, grayish membrane on sides and tip of uvula.

March 7th.—Throat clean.

March 15th.—This child, with two others in the ward, to-day showed a re-formation of the membrane on tonsils and uvula.

March 16th.—Considerable laryngeal dyspnœa. Membrane persists.

March 18th.—Intubated. Bronchial râles over chest. Temperature, 101 to 103° F.; pulse, 130 to 150; respiration, 35 to 60. Broncho pneumonia.

March 21st.—Left cheek and lip swollen and œdematous.

March 23d.—Extensive ulceration of mucous membrane of left cheek. Child very weak. Temperature and pulse remain high.

March 25th.—Tube removed. Membrane disappearing. Less swelling in face. Seems somewhat better.

March 31st.—Gradually grew weaker, with continued high temperature, until death.

Case II. February 9th.—Frank McM——, aged two. Membranous rhinitis with pharyngitis. Death. Clinical history: Slight membrane on lateral walls of pharynx. Thick, whitish, succulent membrane blocking up both nostrils. Glands of neck swollen.

February 12th.—Marked increase in inflammation of glands and periglandular tissues. Pharynx clean. Disintegrating membrane in nose.

February 20th.—Glands suppurated. Had irregular high temperature, 102 to 105° F. Pulse above 150. Died in septic condition.

Bacterial examination: Markedly twisted streptococcus, almost in pure cultures. No Loeffler bacilli ever present. Bouillon clear, with flocculent sediment.

Case III. February 9th.—Edna K——, aged two and one-half. Death. Clinical history: Tonsils, adjacent edges of faucial pillars, and borders of uvula, covered by a thin, pearl-colored pseudo-membrane, which, when removed, reveals ulcerations. Rash. Temperature, 103° F.; pulse, 156; respiration, 34. Patient died on the 18th with high temperature, pulse, and respiration.

Bacterial examination: Very numerous colonies of the long-chained streptococci and nearly as many of the staphylococcus pyogenes aureus.

Case IV. February 7th.—William W——, aged seven. Had had scarlet rash and high temperature. Recovered. Clinical history: On 18th, thin, whitish membrane adherent to tonsils. Glands of neck swollen.

February 27th.—Incision of suppurating glands. Tonsils clean.

February 29th.—Better in every way. Temperature remained between 99 to 101° F.

Bacterial examination: From throat and from glands a streptococcus, in long twisted chains, was obtained. From the thin purulent serum from the glands a pure culture was secured.

Case V. February 23d.—Annie O'H——. Recovered. Clinical history: Scarlet rash; no fever; slight hyperæmia of throat.

March 17th.—When apparently well, developed a thin, dirty-white membrane on tonsils, which left a raw surface on removal.

March 19th.—Considerable ulceration of tonsils, and marked induration of glands of neck, with tenderness.

March 25th.—Membrane disappearing.

From swab of throat on February 23d nearly pure culture of the streptococcus longus. From bit of membrane, March 19th, almost pure culture of colonies of a streptococcus, appearing as a diplococcus and in short rows under the microscope.

Case VI. February 18, 1892.—Rose C——, aged three and a half. Died. Clinical history: Child looks very ill. Thin, soft membrane on sides of uvula, anterior pillars, and lateral walls of pharynx. When removed, leaves bleeding, ulcerated surface. Glands of neck swollen.

February 21st.—Membrane nearly gone, superficial ulceration on sides of uvula. Glands hard, indurated, and much swollen. Died on 22d. Temperature varied between 103 and 105° F.; pulse, 160 to 170; respiration, 44 to 58.

Bacterial examination: Almost pure culture of the streptococcus.

Summary and Remarks.—In 11 other cases of similar soft membrane on faucial pillars, edges of uvula, and tonsils, by far the most numerous colonies were those of the long chained streptococci. In one case a streptococcus, similar to that occurring in the late membrane in Case V., was present. From 2 cases of follicular tonsillitis, and from 8 cases, without exudation, in which hyperæmia of pharynx and scarlet rash were present, abundant streptococci were invariably found. In none of the cases were the Loeffler bacilli found. Of the 10 cases of scarlet fever, in which the complicating croupous inflammation appeared early, 6 died. In the 7 in which it appeared late, all recovered. In the 6 fatal cases, 2 had extensive gangrenous cellulitis, beginning in the neck, spreading over the chest, and causing the sloughing of an extensive portion of skin. A third had diffuse suppuration in and about the cervical glands.

The presence of streptococci growing in long twisted chains in the throats of all the cases examined during the period of the eruption is very noteworthy, and strongly indicates the necessity of carefully looking after the cleansing of the throats, whether any visible membrane is present, or not. The fatal result in some seemed to be due more to the complicating cellulitis and abscesses than to the scarlatina. The possibility, suggested by some observers, that the streptococci may be the cause of scarlet fever, is worthy of investigation. It would take very strong evidence, and necessitate finding some constant differences between the streptococci occurring in scarlet fever and those appearing so frequently in other conditions, or the proof that they can at one time cause scarlet fever and at another a local lesion in the throat. It would seem more probable that the infectious diseases, especially scarlet fever and measles, favor the development and growth of the streptococci, known to be so frequently present in both the healthy and inflamed throat.

In three of the children who were entirely convalescent the pseudo-membranous inflammation seemed to be the result of an infection from others in the ward. The pseudo-membrane lining the nasal cavities in Case II. is interesting, indicating that some cases of membranous rhinitis are due to streptococci.

Pseudo membranes Involving Larynx caused by Streptococci.—Case I. February 13th.—Hattie S——, aged five. Recovered. Clinical history: On admission, cyanotic from laryngeal obstruction; intubated, relieved; very slight, adherent, thin, pearl-gray patches on uvula. Temperature, 100° F.; pulse, 102; respiration, 22.

February 17th.—Patient never seemed sick; exudation on uvula disappeared; no albumin in urine; tube remained in five days.

Bacterial examination: Plates and tubes, made on two days, showed no Loeffler bacilli, but many colonies of a long chained streptococcus and scattering forms.

Case II. February 14th.—Nochem E——, aged six. Recovered. Clinical history: Admitted with marked laryngeal stenosis; intubation gave perfect relief; no membrane visible. Temperature, 101° F.; pulse, 132; respiration, 34. From time to time some difficulty in breathing, which was relieved by calomel fumigation. For one week temperature varied between 99 and 101° F.; pulse, 100 to 126. Never any visible membrane. No albumin. Tube removed on the fifth day.

Bacterial examination: No Loeffler colonies found on plates or tubes made from swabs of pharynx and tonsils taken on the first three days; numerous streptococci.

Case III. March 16th.—Osthof ——, aged three and one half. Recovered. Clinical history: Admitted with marked laryngeal dyspnœa; vomited, was fumigated, but without relief; intubated; both tonsils covered by a nearly white, thin, adherent membrane. Temperature, 101° F.; pulse, 128; respiration, 30.

March 19th.—Still extensive patches of same membrane on tonsils; breathes fairly well; no prostration. On second day temperature reached 103° F. Now 99° F.

Bacterial examination: Numerous colonies of streptococci; none of Loeffler bacilli.

Case IV. March 18th.—Esther F——, aged one. Recovered. Clinical history: Very small white patch, slightly adherent to right tonsil; laryngeal dyspnœa; made to vomit, and fumigated with calomel, but without relief; intubated five hours after arrival. Temperature, 99.6° F.; pulse, 120; respiration, 30.

March 20th.—Seems about well; tube still retained; some albumin in urine.

March 26th.—Tube removed; temperature never above 100° F.

Bacterial examination: Cultures gave abundant colonies of the long-chained streptococcus.

Case V. March 19th.—Morris G——, aged four. Died. Clinical history: Intubated before admission. Temperature, 100° F.; pulse, 130; respiration, 32. No membrane visible in throat; some white, flaky membrane coughed up; large amount of albumin in the urine.

March 22.—Chest full of râles; child drowsy and cyanotic, although there is no laryngeal obstruction. Temperature, 102° F.; pulse, 150; respiration, 42. Swallows with difficulty. Died on 23d.

Bacterial examination: Abundant colonies of long-chained streptococcus and many of micrococci and other scattering forms.

Case VI. March 21st.—Margaret F----, aged four. Clinical history: Marked laryngeal dyspnœa on arrival, intubated one-half hour later; large piece of thin, crumbling membrane coughed up through tube; swollen tonsils, with small whitish patches. Temperature, 99.4° F.; pulse, 104; respiration, 26.

March 24th.—Tube removed; seems well; highest temperature, 101° F. No albumin in urine.

Bacterial examination: Cultures from swabs and from membrane coughed up had many colonies of long-chained streptococci and some of streptococci appearing in short rows and as diplococci.

Case VII. March 30th.—Katie F——, fifteen months, sister of last. Clinical history: Five days before admission slight cough, next night awoke suddenly with croupy cough. The laryngeal symptoms increased from night to night. Intubated shortly after admission. Temperature, 100.2° F.; pulse, 112; respiration, 28. Thin whitish deposits on tonsils.

April 1st.—Had an attack of marked laryngeal dyspnœa, requiring the removal of the tube. Attached to it was a long piece of membrane. Temperature, 103° F.; pulse, 144; respiration, 30. Restless.

Patient developed broncho-pneumonia. Temperature remained high. Tube was removed on the eighth day. Died on April 10th.

Bacterial examination same as in last.

These two cases occurring in the same family, one eight days after the other, point to the possibility at least of a direct transmission of the contagion.

CASE VIII. March 3d.—Jennie P——, aged eleven months. Intubation. Death. Clinical history: Slight patches on tonsils, laryngeal dyspnœa. Whole lower face badly burned, through attempt of mother to give it steam inhalations. Child looks badly. Moist râles over whole chest. Glands of neck slightly swollen.

March 4th.—Intubated. The tube keeps clogging with thick purulent fluid. Dyspnœa increased, and child died at midnight.

Bacterial examination: From first day many streptococci, and many colonies of a quick-growing micrococcus, which liquefied gelatine and coagulated milk. The growth on the media was entirely different from the staphylococci. From trachea, after death, an almost pure culture of the micrococci was obtained.

CASE IX. March 17th.—James F——, aged two and one-half. Intubation. Death. Clinical history: On account of a previous history of scarlet fever, this case has been described under the scarlatinal class.

CASE X. March 19th.—William M——, aged thirty. From Presbyterian Hospital. Clinical history: No specific, alcoholic, or nephritic history. Symptoms began on the morning of the day admitted. When admitted, patient was suffering from laryngeal dyspnœa. Examination revealed much swelling and redness of whole larynx, also a small patch of moist membrane on arytenoids.

March 21st.—Dyspnœa was so bad on the 20th as to nearly call for tracheotomy. To-day breathing easier. Soft, dirty-gray membrane persists on swollen arytenoids. Small patches, also, on the false cords and epiglottis. Membrane disappeared after two days, and patient recovered. The orderly who attended the patient developed a marked follicular tonsillitis. In both these cases the most numerous colonies were those of the streptococcus growing in long twisted chains.

CASE XI. April 27th.—Andrew I——, aged forty-three. Death. On admission the history is obtained from friends that he has been three days sick. He is weak, slightly delirious, and appears as if suffering from some severe infectious disease. The whole uvula and the portions of soft palate adjacent to it are covered by a very thin, dirty covering which can hardly be called a pseudo-membrane. The whole pharynx and palate are extremely hyperæmic. Patient is hoarse, and has some laryngeal dyspnœa. Temperature, 103° F.; pulse, 128; respiration, 26. Patient became violently delirious, and died the next day. No autopsy.

This case is interesting as it is the only fatal one in adults. It is probable that the croupous inflammation was only a complication of some one of the infectious diseases.

Pseudo membranous Laryngitis, not True Diphtheria.—Table of Cases.

Number.	Name.	Age.	Disease and complications.	Temperature, pulse, and respiration on arrival.	Length of time intubated.	Result.
1	Hattie S.	5 years.	Croupous laryngitis; croupous patch on uvula.	Temp., 100; pulse, 102; resp., 22.	Membrane remained 4 days; intubated for 5 days.	Recovered.
2	Nochem E.	6 years.	Croupous laryngitis.	Temp., 101; pulse, 132; resp., 34.	Tube removed 5th day.	Recovered.
3	Harry O.	3½ years.	Croupous laryngitis; croupous tonsillitis.	Temp., 101; pulse, 128; resp., 30.	Tube removed 5th day.	Recovered.
4	Esther F.	1 year.	Croupous laryngitis; croupous tonsillitis.	Temp., 99; pulse, 120; resp., 30.	Tube removed 8th day.	Recovered.
5	Rosie B.	3½ years.	Croupous laryngitis.	Temp., 99; pulse, 116; resp., 24.	Tube removed 3d day.	Recovered.

Pseudo-membranous Laryngitis, not True Diphtheria — Table of Cases.—Continued.

Number.	Name.	Age.	Disease and complications.	Temperature, pulse, and respiration on arrival.	Length of time intubated.	Result.
6	Morris G.	4 years.	Croupous laryngitis; bronchopneumonia.	Temp., 102; pulse, 150; resp., 42.	Intubated before admission; lived 4 days.	Died.
7	Jennie P.	11 mos.	Croupous laryngitis; croupous tonsillitis; scald of face; bronchitis.	Temp., 103; pulse, 150; resp., 40.	Intubated with but slight relief; lived 1 day.	Died.
8	James F.	2½ years.	Extensive pseudo-membrane in throat; cellulitis; croupous laryngitis; broncho-pneumonia.	Temp., 100.	19 days after admission intubated; removed after 7 days.	Died.
9	Barney S.	2¾ years.	Croupous laryngitis; developed measles 8th day.	Temperature, 101.4; pulse, 106; resp., 38.	Intubated; removed 8th day.	Recovered.
10	Wm. C...	2 years.	Croupous laryngitis; croupous rhinitis.	Temperature, 101.4; pulse, 128; resp., 38.	Intubated; removed 8th day.	Recovered.
11	Bert. P..	4 years.	Croupous laryngitis.	Temp., 104; pulse, 144; resp., 48.	Intubated.	Recovered.
12	Kate F...	15 mos.	Croupous laryngitis; croupous tonsillitis; broncho pneumonia.	Temperature, 100.2; pulse, 112; resp., 28.	Intubated; lived 11 days.	Died.
13	Margt. F.	4 years.	Croupous laryngitis; croupous tonsillitis.	Temp. 99.4; pulse, 104; resp., 26.	Intubated half an hour after admission; removed after 3 days.	Recovered.
14	Harris A.	3 years.	Croupous laryngitis.	Temp. 101; pulse, 144; resp., 40.	Intubated on admission; removed 6th day.	Transferred for measles 9th day.
15	Wm. F..	30 years.	Croupous laryngitis.	Moderately high temperature.	Marked dyspnœa.	Recovered.
16	Andrew J.	43 years.	Croupous laryngitis; pharyngitis, etc.	Temp., 103; pulse, 128; resp., 26.	Patient died in 24 hours; apparently had some infectious disease besides croupous inflammation.	Died.

Fourteen of these 16 were in young children. In 5 of the 16 no deposit or membrane was visible above the larynx. Four of the 5 deaths were due to lung complications.

Summary.—These sixteen cases, occurring in four months, prove that membranous croup is frequently an independent disease, having no connection with true diphtheria. In only two was any connection with scarlet fever or measles discovered. On admission, a diagnosis from clinical history and appearance was impossible.

In the majority of the nine cases that recovered, the course of the disease was mild After intubation had relieved the dyspnœa, the patients never appeared dangerously ill. By the third day they were sitting up in their beds and playing with their toys. The temperature averaged somewhat higher during the first days than in the cases of laryngeal diphtheria, and rose to 103 and 104° F. when the lungs became involved.

In two of the children a pretty clear history of direct infection from other cases was obtained. In croup, the magical effect of intubation is seen, for without tracheotomy or intubation the majority would certainly have died. The good percentage of recovery, 66⅔ per cent., in these cases, as contrasted with intubation in diphtheritic laryngitis, thirty per cent., throws much light on the problem why at certain times and in certain countries the percentage of recoveries is so much greater than in others. It also forces the query whether, in the future, all cases should not be examined bacteriologically, if the statistics are to be valuable. Broncho pneumonia seems to be the most frequent cause of death.

Pseudo-membranes Confined to the Tonsils Caused by Streptococci.—CASE I. March 3, 1892.—Genet M——, aged six. Clinical history: From an asylum with three other cases. Right tonsil is swollen and covered by a

thick, adherent, gray-colored, fibrinous pseudo-membrane. Cervical glands considerably swollen on right side. Slight pain and tenderness. Temperature, 101° F.

March 5th.—Still thick membrane on tonsil. Nowhere else. Feels well.

March 7th.—Tonsil clean. Is slightly croupy.

March 9th.—Perfectly well.

Bacterial examination: Cover-glass made from smear of membrane showed very numerous cocci in pairs, singly, and in chains. Also a few bacilli. Plates gave an almost pure culture of the long-chained streptococcus. Nothing found in anyway similar to the Klebs-Loeffler bacillus.

CASE II.—Mark C——, aged four. From same asylum. Clinical history: Pseudo-membrane on upper portion of left tonsil and adjacent surface of anterior and posterior pillars. Well on third day. No fever.

Bacterial examination: Mostly streptococci.

CASE III. March 5, 1892.—Lottie E——, aged twenty-one. Clinical history: Both tonsils are nearly covered by irregular, semi-adherent pseudo-membranous patches. Considerable swelling and hyperæmia. No swelling of glands. Not much pain; slight constitutional symptoms. Temperature, 101° F.

March 7th.—Tonsils nearly clean. Feels well.

March 8th.—Perfectly well.

Bacterial examination: Many colonies of the long-chained streptococcus and other scattering forms.

CASE IV. March 12th.—Charles F——, aged thirty. Clinical history: Two days ago felt pain and soreness in region of tonsils. Went to Bellevue, and was sent to Charity Hospital. From there taken to the Willard Parker Hospital. Both tonsils covered by a dirty-brownish smear which is readily removed, leaving irregular patches on tonsils. Pharynx covered by thick, purulent discharge. Tonsils and peritonsillar tissues are much swollen, and the whole pharynx and fauces hyperæmic. Considerable swelling of glands of neck. Temperature, 102° F. Great pain on swallowing and on opening mouth.

March 14th.—Still considerable swelling and hyperæmia, but membranous deposits have nearly disappeared. Feels much better.

Bacterial examination: Reveals mostly colonies of the long-chained streptococcus.

CASE V. March 13th.—Mary C——, aged four. Clinical history: This child is from the same asylum in which four cases occurred ten days before. Both tonsils are swollen, and covered by thick masses of exudate. Temperature, 101.4° F.

March 16th.—Tonsils are clean. Patient feels well.

Bacterial examination: Plates give nearly pure cultures of the long-chained streptococcus.

CASE VI. March 14th.—Annie E——, aged six. Clinical history: Both tonsils covered by irregular patches of pseudo-membrane, with intervening portions smeared with purulent discharge. Considerable swelling of tonsils. Almost no constitutional disturbance.

March 16th.—Tonsils almost clean.

Bacterial examination: The great majority of the colonies are of streptococci.

CASE VII. March 7th.—George M——, aged thirty-one. Clinical history: Felt chilly and depressed two days ago. The next day his physician on examination found the tonsils swollen and covered with a semi-adherent soft deposit. He was referred to the Board of Health. The first examiner thought it a doubtful case, referred it to a second, who pronounced it true diphtheria. On admission, condition the same. Glands of neck somewhat swollen.

March 8th.—Throat is clear, and he feels well.

Bacterial examination: Majority of colonies, streptococci in long twisted chains.

CASE VIII. March 11th.—Land F——, aged twenty-two. Clinical history: History of recurrent attacks of sore throat similar to present one. Swollen, irregularly excavated tonsils, with a few irregular, gray deposits. Pain on swallowing and opening mouth.

March 14th.—Right tonsil nearly covered by dirty adherent pseudo membrane. Left, follicular deposits. Less pain and tenderness.

March 16th.—Still small deposits on tonsils.

March 18th.—Tonsils clean.

Bacterial examination: The most numerous colonies are of a rather quick-growing streptococcus which occurs as a diplococcus and in short chains of diplococci.

Summary.—This disease is so familiar that it is unnecessary to give more illustrative cases. In the 159 here studied 58 are included under this heading. This comparatively large number would seem to indicate that in adults, thick croupous patches, adherent or not adherent, if confined to the tonsils, after twenty-four hours very rarely have anything to do with true diphtheria. The same bacteria (the streptococci) which under certain influences cause an inflamed throat or a follicular tonsillitis, under others seem to produce a croupous tonsillitis. In several cases two members of a family were affected, one with the former, the other with the latter disease. In a few others a very complete history of direct transmission of the contagion was obtained. The croupous deposit, or pseudo-membrane, lasted from two to seven days. All cases recovered without complications.

The intimate connection of some cases of croupous tonsillitis with scarlet fever is brought out in the following examples:

Rose F——, aged twenty-one, was admitted, with marked croupous tonsillitis with constitutional and local symptoms, on May 20th. The three previous days she had taken care of a child sick with scarlet fever, and on the last day also of the mother, who was attacked with croupous tonsillitis. Both she and the mother had come in frequent direct contact with the child.

Two physicians attended a gentleman sick with malignant scarlet fever and croupous tonsillitis. Both were attacked with croupous tonsillitis, and one with scarlet fever also.

The streptococci, found in the pseudo-membranes, presented some striking differences. By far the most frequently present was a streptococcus showing similar morphological and biological traits to the streptococcus pyogenes and erysipelatus. This streptococcus was present in all the scarlatinal cases during the eruption. From the different cases the cultures presented some minor differences in the size of the colonies and the appearance of the flocculi in the broth. The pathogenic qualities varied greatly. Inoculations in rabbits from some produced abscess and necrosis, from others merely slight redness and swelling.

During the last two months, cultures from a number of cases presented a coccus which formed larger colonies than the long-chained streptococcus on the agar plates, producing colonies with nearly even edges, of a coarse, granular, and blotched appearance. Here and there, from their edges short runners sprouted out, and in some cases short twisting loops.

In bouillon, at 37° C., the growth of this streptococcus is vigorous, forming, in twenty-four hours, considerable gray sediment, with cloudy bouillon. Microscopical examination reveals diplococci in pairs and short rows of four to eight. In gelatine tubes the growth does not differ from that of the streptococcus pyogenes except in that it is somewhat more vigorous. The few animal experiments made indicated it to be less pathogenic than the long-chained streptococcus in rabbits. Injected in the ears of rabbits it produced redness and swelling, from the second to the fifth day, with very slight or moderate fever. The rabbits after the fifth day seemed well. Intravenous inoculation was without effect in two cases. A third variety differed only from the first, in that the loops were less twisted. One of these forms, usually the first, was the most abundant micro-organism present in every one of the cases examined, in which the Klebs-

Loeffler bacilli were absent. And in cases of true diphtheria they were usually present in greater or lesser numbers.

The staphylococcus pyogenes aureus was only irregularly present in the cases examined, and only abundant in five. In these, from the blood-serum tubes alone one would have judged that they were the most abundant form of bacteria, but an early inspection of the plates under the microscope revealed the tiny colonies of the streptococci to be present in far the greater number.

In those cases in which suppuration of the cervical glands and extensive cellulitis was present, the long-chained streptococci were always found, except for such complications the special form of streptococci present seemed to exert no influence on the severity or length of the disease.

General Summary.—*Bacteria.*—In 159 cases of pseudo-membranous inflammations there were 54 in which the Klebs-Loeffler or diphtheria bacilli were present, usually as the only or most numerous form of bacteria. With them were often associated streptococci and other micro-organisms. In every one of the remaining, streptococci were the most abundant bacteria, and often the only ones. From various pseudo-membranes the streptococci obtained differed in manner of growth and pathogenic action. The staphylococci were often entirely absent, at other times present in moderate numbers, but never in excess of the streptococci.

Location of Lesion.—In both diphtheria and pseudo-diphtheria the pseudo-membranes occurred on the mucous membrane of the nose, pharynx, larynx, soft palate, and tonsils. In both, the tonsils were the parts most frequently involved. The nasal cavities were more often involved in true diphtheria.

Mortality.—In true diphtheria, 46½ per cent.; in pseudo-diphtheria, 5⅔ per cent.; intubation in diphtheria, 70 per cent.; intubation in pseudo-diphtheria, 28½ per cent.; adults in diphtheria, 36 per cent.; adults in pseudo-diphtheria, 2 per cent.

Contagiousness.—In quite a large proportion of cases evidence was obtained of the direct spreading of diphtheria through contact with infected persons and clothing. In only a few cases of pseudo-diphtheria was equally strong proof obtained. Children sent away from diphtheria for safety, carrying with them their infected clothing, were in a number of cases a source of danger to the families who received them.

Clinical Observations.—It is important at the outset to remember that true diphtheria is frequently associated with pseudo diphtheria, and this mingling of the two adds greatly to the clinical difficulties. Severe uncomplicated pseudo membranous laryngitis may be either true or pseudo diphtheria. The early clinical diagnosis is usually impossible. Low temperature, great prostration, and heart failure point to true diphtheria. A high temperature, lung complications, and no history of infection are in favor of pseudo-diphtheria.

Death occurred usually early, due to heart failure in diphtheria; usually later, due to broncho-pneumonia, in pseudo-diphtheria. In both, early death from suffocation may occur, if intubation or tracheotomy is not performed.

Membranous rhinitis is usually a very mild form of diphtheria having a good prognosis. Membranes complicating scarlet fever are seldom true diphtheria. Pseudo-membranes and thick deposits well developed on, but confined to, the tonsils of adults are nearly always pseudo-diphtheria. Follicular deposits confined to the tonsils in adults are probably always pseudo-diphtheria. Small or large, thick or thin, firmly or slightly adherent patches confined to the tonsils or extending to the larynx in young children may be either true or pseudo-diphtheria, and the clinical diagnosis is often impossible during any time of the disease. Extensive thin, grayish pseudo-membranes, occurring only on those surfaces of the uvula, tonsils, and faucial pillars which lie in contact were always pseudo-diphtheria. The prognosis is good in these cases, except when there are early complications of infectious diseases.

The thick grayish or grayish-yellow pseudo-membranes which cover a large portion of the soft palate and tonsils, often involving naso-pharynx and nostrils, were always the lesion of true diphtheria. These cases were often fatal in both children and adults.

Conclusions.—The results of previous investigations, with the addition of that brought out in these studies, seem to force on us the conclusion that there are two great divisions of pseudo-membranous inflammations, one caused by the Klebs-Loeffler bacilli and the other by some form of streptococci. The few cases in which the pneumococcus of Fraenkel or other cocci seem the cause naturally fall in the second division.

The first is, from beginning to end, a local process, and its lesions are due to the effects of the poison formed by the bacilli in the pseudo-membrane. It is dangerous at all periods of life. The second is also at first a local lesion, but may at any time become a general infection. It is peculiarly liable to cause broncho-pneumonia in children. Both diseases are frequently associated together. Both are directly contagious, though in different degrees.

These two diseases, caused by different bacteria and differing in so many points, should no longer be called by the same name. The name diphtheria will probably be agreed upon by all for those cases in which the Klebs-Loeffler bacilli are present, whether alone or associated with other bacteria.

For the second division some name will have to be agreed upon; whether the streptococcus will be found to be in such a majority the cause that the name streptococcus diphtheria can be applied to it, only further investigation can determine. Perhaps at present the term pseudo-diphtheria will be acceptable.

In all cases where the diagnosis is in doubt, bacteriological examination should be made, because:

1. A correct diagnosis should always be sought for.

2. Without it, all attempts to learn from statistics the worth of special forms of treatment and methods of prevention are well-nigh useless from the frequent incorrectness of the diagnosis. The fact that during four months less than one-third of the cases sent to the diphtheria wards of the hospital had true diphtheria, is sufficient proof of the difficulty of making a clinical diagnosis.

3. It is a great help to prognosis and rational treatment in the more severe cases and enables us to take measures more effectually to prevent the spread of the contagion.

4. It is certain, can frequently be made immediately, and always within twenty hours.

The amount of familiarity with bacteriological work and the appliances necessary, although not very great, are still enough to prevent the great majority of physicians from undertaking it themselves. As the early detection of diphtheria is important for the general health, and as this disease occurs most frequently and is most dangerous among the crowded poor, who are unable to pay for special examination, it would seem peculiarly the business of the Boards of Health to undertake it. In small cities some central places could be selected where the necessary appliances could be kept, in large cities several would be necessary. From these laboratories a properly equipped man could be called to make the cultures and give the bacteriological diagnosis. Children's hospitals and those for infectious diseases should certainly give their pathologist the means to do this.

To insure the safety of those not having diphtheria, these hospitals should have wards separated, where doubtful cases could be kept for twenty-four hours until the diagnosis was made certain by bacteriological examinations. Where this is impossible, experience at the Willard Parker Hospital has shown that general cleanliness and antiseptic irrigation of the nasal and pharyngeal mu-

cous membranes is sufficient in the great majority of cases to prevent the spreading of diphtheria. Care should be taken not to expose small children to pseudo-diphtheria, for it is undoubtedly contagious under favorable conditions and is in them dangerous.

I wish, in closing, to express my gratitude to Professor T. Mitchell Prudden, Director of the Pathological Laboratories of the College of Physicians and Surgeons of Columbia College, New York, for his kindness in making many valuable suggestions and in affording me every needed laboratory facility for these investigations.

I also wish to thank Dr. T. W. Lester, Resident Physician to the Willard Parker Hospital, for his help in the clinical part of these studies, and for the use of the hospital charts.

128 West Eleventh Street, July 1, 1892.

Explanation of Plate.

Figs. 1 and 2 show cultures from same diphtheritic membrane—1, with numerous; 2, with fewer colonies. The more numerous colonies are composed of diphtheria bacilli; the larger whiter ones of non-pathogenic bacilli.

Fig. 3, pure culture of diphtheria bacilli from tissue of inoculated guinea-pig.

Fig. 4, culture obtained by pressing a portion of a soiled sheet, removed from a diphtheria patient, against the media surface. Many varieties of bacteria grew. The smaller colonies are diphtheria bacilli and streptococci.

Fig. 5, a pure culture of streptococci from scarlatinal membrane.

Fig. 6, culture from croupous tonsillitis. The exceedingly small colonies are streptococci. Some of moderate size, staphylococci. No diphtheria. In both 5 and 6 the condensation water has swept the bacteria over the plate surface, making a diffuse growth of colonies.

A NEW METHOD OF REMOVING THE PROSTATE GLAND.

By J. S. PYLE, M.D.,

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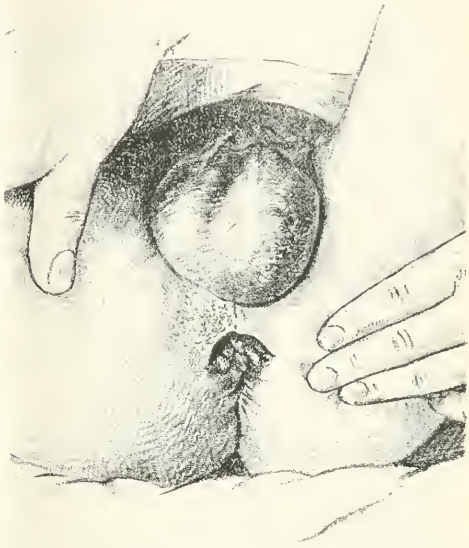
On April 6th a case of enlarged prostate gland came to my hospital for an operation. The patient was John W——, of Bluffton, Ind., aged seventy years; bodily vigor, fair, but not such as would warrant an operation of great gravity. The walls of the bladder retained their usual contractile power, but the urethral canal was so compressed from the hypertrophied prostate that only the smallest soft-rubber catheter could be inserted to empty the bladder of urine. I planned an operation to suit the physical needs of the patient, feeling assured that the supra-pubic operation of Dr. E. L. Keys, and the lateral incision as in the lithotomy operation described by him and others, were surgical proceedings that my patient could not well endure. An acquaintance with the anatomy of the rectal and perineal spaces soon suggested that a much simpler operation than either of the above was posssible; and forthwith I proceeded to satisfy myself by a process of reason that I was not on the side of fancy, but real possibilities. The space immediately in front of the rectum and behind the bulb of the urethra was chosen as the route through which to reach the base of the bladder and prostate gland. The transverse diameter of the outlet of the pelvis at this point is too short to work in, and consequently it behooved me to increase the operating space without doing injury to important structures. I accomplished this by making a semicircular incision, as is shown in the cut, from a point midway between the tuber ischii around the anus and entirely within the connective tissue between the bulb of the urethra and rectum, or what should be styled the male perineum. The advantage of this is that it gives the widest possible diameter of the outlet, with no hemorrhage to speak of, and easy access to the field of operation. No spurting vessels need be divided, inasmuch as they lay to the outside and in front of the incision. After the integument and tough fascia are divided, the handle of the scalpel may be used to separate the loose tissue between the rectum and urethra, until the fascia covering the levator ani is reached. Division of these structures should be next in order, when the enlarged prostate will make its appearance. The finger is the most convenient instrument in the operation, and should be freely used in opening up the way and separating the gland. At this juncture the prostate may be seized with a pair of vulsellum forceps and pulled



through the incision. If the space be not large enough, the lobes may be removed separately. With a knowledge of the anatomy of the part but little difficulty is encountered in their removal. The step to be guarded is the introduction of a steel sound in the bladder after or during the operation. Puncture of the urethra is an accident very likely to happen, on account that the urethra is loosened up and is very thin. With ordinary care this need not occur. A curved steel sound in the bladder is an aid during the excision. It keeps the base of the bladder from ascending while the gland is being separated.

No operation can be more simple than this, and none can be more important. It promises an easy removal of the prostate, and but slight risk to the patient.

My case was operated on in the way described, and the operation was successful. I found no difficulties to overcome, and can specially recommend this proceeding.

68 West Tuscarawas Street, May 10, 1892.

The Rational Treatment of Pneumonia.—Dr. Reed (*Therapeutic Gazette*, March and April, 1892), from a long and very complete statistical and clinical report on the treatment of pneumonia, urges the justice of the following conclusions: 1. That water locally applied—either as wet pack or baths—is the most efficient single therapeutic measure in acute pneumonia. 2. That veratrum viride or aconite can accomplish more than any other single drug in the first stage, and that the same is true of digitalis in the second stage. 3. That a combination of one of these cardiac sedatives with opium and diaphoretics, affords not only a safe but a highly successful internal treatment for the first stage of acute pneumonia, being capable of aborting the disease when its administration is begun near the onset, and repeated at short intervals day and night. 4. That venesection, though most efficient in sthenic pneumonia, and, if judiciously used, much more successful than any merely expectant method, is no longer an indispensable resource, since other remedies have been found to accomplish the same results more surely and more pleasantly.

THE RELATION OF AURAL AND NASAL AFFECTIONS, BASED ON ONE THOUSAND CASES OF OTITIS MEDIA.[1]

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In presenting a paper on a topic that has been discussed ever since otology was deemed worthy of serious consideration, it can hardly be expected or understood that I will present wholly new ideas or views, but rather consider old views in the light of later clinical experience, with the hope that it may result in a better understanding of the various and frequently mixed conditions found here, and consequently in better therapeutic results. This paper is based on the last 1,000 cases of middle-ear disease treated at the Harlem Eye, Ear, and Throat Infirmary, prior to April 1, 1892. They were examined and the diagnosis made in each case by myself or assistants, with no other idea than to keep a correct record of the work done, and without expectation of publishing them, until our chairman invited me to contribute a paper. It was my fortune to begin the study of ear and throat diseases at about the same time, in different institutions, and as my knowledge of them increased, the necessity for treating them together became more and more apparent; but as it was the practice in the older institutions, then as now, to treat them separately, it seemed impossible to carry out that view under existing circumstances, and was one of the reasons for establishing another special institution.

During the ten years since the Harlem Infirmary was opened, the rule has been adhered to of examining the nasal cavities and the naso-pharyngeal space, and treating the pathological conditions found there in every patient suffering from middle-ear disease, with the same care as was exercised in the examination of the ear and the treatment of its pathological conditions. The ear diseases consisted of

Acute catarrhal otitis	64	
Subacute catarrhal otitis	99	
Chronic catarrhal otitis	440—	603
Acute purulent otitis media	136	
Chronic purulent otitis media	230	
Chronic purulent otitis media with aural polypi	31—	397
Total		1,000

The nasal affections accompanying or causing these were:

Acute rhinitis	84	
Subacute rhinitis	33	
Chronic rhinitis	374	
Hypertrophic rhinitis	253	
Atrophic rhinitis	27—	771
Adenoid vegetations	27	
Hypertrophied tonsils	27	
Hypertrophied tonsils and adenoid vegetations	5	
Nasal polypi	8	
Deformed nasal septi	76—	143
Scarlet fever	23	
Measles	11	
Diphtheria	3—	37
Sea-bathing		2
Unaccounted for		47
Total		1,000

These tables show that in this particular 1,000 cases there were pathological conditions of the nasal and pharyngeal membrane to account for the aural trouble in ninety five per cent. Of these, seventy-seven per cent. were of the various forms of rhinitis, 14.3 per cent. had deviations of septum, polypi, vegetations, and enlarged tonsils, and 3.7 per cent. could be attributed to the throat complications of the exanthemata, leaving a balance of 4.7 per cent. in which the cause was not accounted for by our records. Some of these, however, were in children too young to permit of a satisfactory rhinoscopic examination being made, and the aural symptoms had existed so long that the parents could not remember whether or not they had been preceded or accompanied in their acute stages by nasal troubles; it is, however, probable the origin of some of these would have been satisfactorily explained had it been possible to obtain their early histories.

The development of inflammations of the tympanum from nasal and pharyngeal affections has been explained in three ways: 1, By direct extension of the inflammatory process by continuity of tissue; 2, from rarefaction of air in the post-nasal space and tympanum during inspiration, due to nasal stenosis; and 3, from obstruction of the mouths of the Eustachian tubes by adenoid vegetations. My own belief is that it is always due to the first cause, and never to the other two.

Reference to the table of throat and nasal affections, shows there were 518 cases of rhinitis, exclusive of the hypertrophic form, and if we add those resulting from scarlet fever, measles, and diphtheria, we have a total of 555—over fifty-eight per cent.—in which the result could have been produced only by extension, and also include 27 cases of atrophic rhinitis; quite as large a proportion, I think, as would be found in a similar number of nasal affections occurring independently of aural complications.

In my observations of these cases an acute otitis media, either catarrhal or purulent, rarely occurs without an acute catarrhal inflammation involving the whole upper air-tract, beginning usually a few days before the aural affection. A coryza resulting in acute otitis media may attack an otherwise healthy membrane, but more commonly there is a chronic inflammation or an hypertrophic condition that renders it much more susceptible to acute attacks.

In treating patients for nasal affections, who do not complain of their ears, if inquiry be made as to aural symptoms, they will, in quite a percentage of cases, promptly reply, "Oh, yes, when I catch cold I am quite deaf, or have ringing of the ears, or both, and a test will show defective hearing, slight though it may be, and inflation will demonstrate more or less obstruction of the Eustachian tubes. In fact, inflation of these cases by Valsalva's method is generally impossible, and frequently difficult by Politzer's.

As has been stated by Bosworth,[1] there is an absence of "catarrhal inflammation involving the membrane lining the Eustachian orifice, as evidenced by redness, swelling, and hypersecretion," and of the drumheads also, in many cases with chronic catarrhal and hypertrophic conditions of the pharynx and ear; but it is also true that in acute otitis media these evidences of an active inflammation of the Eustachian orifices are rarely absent. The aural symptoms are so much more distressing than those referable to the nose, in all acute inflammations of their lining membrane, that patients at once apply to an aurist rather than to a laryngologist; therefore the latter does not have the opportunity of making rhinoscopic examinations in such cases as frequently as the former.

In the list of nasal affections there were hypertrophic rhinitis, 253; vegetations, 32; deformities of the septum, 76; and polypi, 8; making a total of 369, in which there was nasal stenosis varying from the slightest interference with free nasal respiration to almost complete occlusion of the nasal passages, and necessitating mouth-breathing at all times. But, as this is not much more than one-third of the cases of nasal diseases we are considering, it becomes, for that reason alone, at least a minor factor, and if we inquire further into the nature of the different pathological conditions causing nasal stenosis, we arrive finally at the fact that nearly all of them are themselves the products of frequent and long-continued inflammations, and are usually accompanied by more or less general catarrhal inflammation of the upper air-passages. In speaking of the etiology of vegetations Bosworth says:[2] "The cause of these growths, then, is simply a

[1] Read before the Section on Ophthalmology and Otology of the New York Academy of Medicine, April 18, 1892.

[1] Diseases of the Throat and Nose, p. 131.

[2] Op. cit., p. 541.

tendency to hypertrophy as the result of inflammatory changes which characterize the lining membrane of the air-passages and their appendages, under the stimulus of repeated colds." In my judgment, that is a very clear and concise statement of the etiology of adenoid vegetations, and applies with equal force to the etiology of hypertrophic rhinitis.

Nasal polypi are never found in an otherwise healthy nose, and occur so infrequently in aural disease, as to be of relatively little consequence to aurists.

I have seen many patients with adenoid vegetations and hypertrophic rhinitis who have presented themselves with acute catarrhal or purulent otitis media, and furnished histories of repeated perforations or acute catarrhal otitis during attacks of acute rhinitis, with a partial or complete disappearance of the aural trouble after the acute inflammation of the nasal mucous membrane had subsided, only to reappear on the next exposure, resulting, finally, however, in considerable damage to or total loss of the ear as an organ of hearing in the vast majority of instances. If the chronic ear affections accompanying vegetations are due to the stenosis, rather than to direct extension of the inflammatory process, how are the acute attacks to be explained? Then, again, it is not rare to find better hearing on the side of greater obstruction of the Eustachian tube, indicating plainly that the damage to the ear is the result of inflammation in the tympanum, rather than to rarefaction of air in the naso-pharynx. Deviations and exostoses of the nasal septum are perhaps not so easily explained as to their origin, although the cause is traumatic in all cases in which it can be ascertained. That they interfere with respiration, and consequently the circulation, and eventually lead to chronic inflammation and pathological changes of the nasal mucous membrane, that render it susceptible to acute inflammatory attacks, frequently involving the lining of the Eustachian tubes and tympanum, does not admit of a doubt; but that the stenosis they cause has any direct action in producing the aural complications, I do not believe. Furthermore, it seems to me incredible that patients would make the physical effort necessary to rarefy the air in the naso-pharynx, and produce the series of results mentioned by continuing to breathe through the nose in these cases, when free respiration can be had by simply opening the mouth.

I do not wish to be understood as saying or implying that nasal stenosis is a matter of little or no consequence, but, on the contrary, regard it of serious importance aside from its relation to aural affections. As to the third cause, I can only say that in none of these cases were the mouths of the Eustachian tubes obstructed by vegetations, nor have I seen such extreme development of them, except in very rare instances; although constantly seeing and operating for their removal in dispensary and private practice, both in connection with and independent of affections of the tympanum.

In the table of throat affections, the term rhinitis has been employed in preference to pharyngitis, or post-nasal catarrh, generally used in the older works on throat diseases, and still retained largely in works treating of otology, for the reason that rhinologists have, during the past fifteen years, come to appreciate the fact that this particular part of the membrane is most liable to acute inflammations, and is the most frequent seat of the more important pathological changes found in the upper air-passages, although the whole membrane is always necessarily involved. That this should be so will at once become apparent, if we consider that, in addition to olfaction, the function of the nose is to warm and filter the air in its passage to the lungs; and that this may be successfully accomplished the turbinated bones have been provided, and their extensive surfaces covered with a mucous membrane richly supplied with relatively large blood vessels, thus furnishing, with the constant exposure to rapid, frequent, and extreme changes of temperature, all the elements necessary to bring about inflammatory attacks. Theoretically, and for the purpose of classification, it is well enough to apply different names to the affections of the different parts; still we must admit that the mucous membrane lining the nasal chambers, the naso-pharynx, and the accessory cavities, including the tympanum, is practically one membrane, notwithstanding the slight histological variations of its different parts, and that inflammations, or pathological conditions of its most exposed parts, are liable to, and frequently do, extend to its more remote and less exposed parts. That nearly all affections of the tympanum are produced in this manner, by the extension of inflammatory processes, beginning in the soft tissues covering the turbinated bones, extending not to other tissues, but along the same membrane to the middle-ear, is to me perfectly plain; therefore we must recognize that the tympanum is anatomically, physiologically, pathologically, and therapeutically inseparable from, and an important part of, the upper-air passages, notwithstanding its chief function is intimately connected with audition.

The origin of the acute forms of otitis media in this manner is so universal, that the aurist, who regularly and carefully inspects the nasal cavities and naso pharynx in these cases with the aid of the modern instruments, skill, and knowledge of the rhinologist of to-day, will rarely find a so called primary case. This, together with the further fact that in the cases of chronic aural catarrh, representing at least one-third of all the ear cases an aurist sees, and including those hypertrophic processes of the lining of the tympanum with anchylosis of the ossicles, and variously designated as adhesive, proliferous, etc., are rarely found, except in patients who have not also much greater pathological changes in the nose and naso-pharynx, as demonstrated by actual inspection of the parts—renders it, certainly in the absence of any other reasonable explanation, more than probable that a mild, or possibly a more severe, otitis occurs during an acute rhinitis, is prolonged by the indefinite duration of the nasal inflammation, until a certain amount of permanent change has taken place in the tympanum. This process is repeated with successive coryzas, until it produces the conditions we are familiar with in those many incurable cases that almost become the bane of an aurist's practice.

Politzer expresses a similar view and says further:[1] "Inspection of the posterior pharyngeal wall, lying behind the cavity of the mouth, frequently gives information as to the condition of the mucous membrane of the superior pharynx, from the changes which can be there observed. . . . Often, however, without the slightest visible change of the posterior pharyngeal wall, far-advanced affections of the mucous membrane of the superior naso-pharynx may be found."

On the other hand, Roosa says: "The rhinoscope will be found a valuable assistant in a few cases for an exact diagnosis of affections of the naso-pharyngeal space. As a matter of fact, however, very few of us who treat a great deal of aural disease make much use of the rhinoscope. It is only in exceptional cases that we find its revelations compensate for the time employed."[2]

I distinctly remember being in conversation with two well-known members of this Section, when one of the gentlemen remarked that he intended to learn to make rhinoscopic examinations, to which the other promptly replied, That is too difficult. I think this illustrates a rather general feeling among aurists, and, while the difficulties are real to those not skilled in making rhinoscopic examinations, they can be readily overcome by the experience and practice afforded by a few months' daily attendance at any of the large clinics for throat diseases in our midst; and after the necessary practice has been had, without which the ability to make examinations quickly, yet thoroughly, and a practical knowledge of the pathological conditions existing here cannot be acquired, no

[1] Diseases of the Ear, pp. 303 and 310.
[2] Treatise on the Diseases of the Ear, Seventh Edition, p. 371.

one will complain of the time required, or a lack of revelations that are to otitis media as cause and effect.

Among the affections mentioned in the table are nearly all the forms and degrees of diseases the nasal cavities and naso-pharynx are liable to, and include a greater variety of pathological conditions than occur in the various forms of otitis media; therefore, in view of the fact that nasal diseases were associated with ninety five per cent. of all the ear cases, it is of the utmost importance to make anterior and posterior rhinoscopic examinations and treat pathological conditions existing there, in all patients suffering from diseases of the tympanum, with the same care and skill as we exercise in the examination and treatment of the aural affection. By so doing the otitis will not only be of shorter duration, but will result in less permanent damage to the ear, and the removal of the nasal affection will render the patient less liable to the acute inflammations of the lining membrane of the ear that finally result in serious permanent damage.

Looking at the practice in this city, we find the college professorships of otology and of laryngology, or rhinology, occupied by gentlemen quite universally recognized as authorities in their respective departments, but not in both. Again, in the eye and ear institutions, although the necessity of treating the throat has in a limited way been recognized by the establishment of throat departments entirely separate from the ear departments, I fail to find among the list of surgeons the names of gentlemen who are known as both aurists and rhinologists.

In this Academy we rarely meet the members of the Section on Laryngology in this Section, nor do the members of this Section frequent the meetings of the throat specialists. Superficially, this might be construed as evidence that the views just expressed are erroneous, but further consideration will entirely dispel any such idea.

The study of otology was begun first, probably because of the more serious result following ear disease, and was well advanced when throat specialists began their active careers; consequently our older institutions for eye and ear diseases were already in operation, and the older oculists and aurists now most prominent in their management, were busy practitioners with too much to do, both in hospital and private practice, to incline them to enter new fields.

While the development of otology and rhinology, as well as other special branches, is wholly due to the researches of specialists in their respective departments, no one, I think, appreciates or regrets more, or perhaps as much, that the pursuit of a specialty tends to limit the field of vision or narrow the man, than those of us who have chosen to limit the practice of medicine to certain branches. We should therefore broaden our field and attempt to get out of old ruts, whenever it can be done consistently, and especially, as in this case, advantageously both to ourselves and those who place themselves in our hands. Those who do so will not only extend their field of practice, but as aurists will have the satisfaction of curing ear cases promptly that otherwise would be indefinitely prolonged and suffer greater permanent damage. They will also do much toward establishing their reputations by removing the cause of frequent and distressing attacks of acute otitis media in patients that have passed through the hands of other, and sometimes better-known, aurists, who do not make careful rhinoscopic examinations in all of these cases, and consequently wholly overlook and fail to remove the cause.

That "this is a condition and not a theory that confronts us," is certainly proven by the list of nasal and pharyngeal affections in the above table, and will be confirmed by practitioners possessed of a thorough knowledge of the diseases of both ear and nose. During the last few years remarkable progress has been made by rhinologists in the knowledge and treatment of those nasal affections we as aurists are directly interested in, but possibly have overlooked.

The nomenclature has been somewhat changed as a better understanding of pathological conditions has been acquired. Light, spring, self-retaining specula that can be quickly introduced, have taken the place of heavy, cumbersome instruments requiring the use of one hand to retain in position, or the turning of a screw to expand the blades, that are as great an improvement as the modern ear specula are over Kramer's bi valvular instrument.

The recognition of the necessity of surgical interference in those conditions producing nasal stenosis has necessarily resulted largely in the abandonment of the use of washes and astringents; but that they are of very great value in the treatment of inflammations here as elsewhere, cannot be doubted, especially in the purulent rhinitis of children too young to remove the secretions by their own efforts. That there is danger of fluids reaching the tympanum and causing acute inflammation there, is, of course, settled; but the danger depends largely on how free the Eustachian tubes are, and such accidents would be much more frequent if they were not generally obstructed in patients suffering from rhinitis. By ascertaining the condition of these tubes, unpleasant results may frequently be avoided.

Nothing has been said about hypertrophied tonsils more than to mention their presence in thirty-two cases, because they do not seem to me to cause otitis, except as a part of a general catarrhal condition of the upper air-passages that renders them liable to acute inflammations. As such, however, they are important, and if there is any considerable enlargement, they should be removed.

The three hundred and sixty-four cases of nasal stenosis represent conditions to be viewed from a surgical stand-point only, and emphasize how necessary it is that every aurist should be a rhinologist; for otherwise, how will it be possible to either diagnose or treat successfully so large a variety and number of affections occurring so constantly in routine practice? Adenoid vegetations should be removed without delay, but, more important still, because of their greater frequency are those various conditions of the turbinated bodies classed under the head of hypertrophic rhinitis, and also generally found with vegetations and deformities of the septum. The introduction of convenient snares, armed with piano-wire, has made the removal of polypi and turbinated hypertrophies a rather simple procedure, and now the use of strong solutions of cocaine, together with saws, chisels, drills, etc., have brought bony obstructions of the septum easily within the domain of office surgery that every aurist should be ever ready to meet, and treat intelligently and successfully.

128 West 126th Street.

Treatment of Appendicitis.—Dr. Senn's conclusions are these, viz.: 1. All cases of catarrhal and ulcerative appendicitis should be treated by laparotomy and excision of the appendix as soon as the lesion can be recognized. 2. Excision of the appendix in cases of simple, uncomplicated appendicitis is one of the easiest and safest of all intra-abdominal operations. 3. Excisions of the appendix in cases of appendicitis before perforation has occurred, is both a curative and prophylactic measure. 4. The most constant and reliable symptoms indicating the existence of appendicitis are recurring pains and circumscribed tenderness in the region of the appendix. 5. All operations should be done through a straight incision; parallel to and directly over the cæcum. 6. The stump after excision of the appendix should be carefully disinfected, iodoformized, and covered with peritoneum by suturing the serous surface of the cæcum on each side over it with a number of Lembert stitches. 7. The abdominal incision should be closed by two rows of sutures, the first embracing the peritoneum, and the second the remaining structures of the margins of the wound. 8. Drainage in such cases is unnecessary and should be dispensed with.—*Medical Progress*, March, 1892.

CREOSOTE IN THE TREATMENT OF PULMONARY TUBERCULOSIS.[1]

By A. L. HALL, M.D.,

FAIR HAVEN, N. Y.

That among the numerous remedies which have found favor in the last few years in the treatment of pulmonary tuberculosis, creosote stands pre-eminent, few will deny.

This verdict has been reached after a careful comparison of the results attained by the use of this agent with those secured by the other various remedies lately employed in the treatment of the different stages of pulmonary tuberculosis, as observed in the public and private practice of some of the most intelligent members of our profession in this country and in Europe.

Although slow at first in finding recognition, creosote has steadily grown in professional favor, and to-day the confidence it has inspired among those who have given it a thorough trial is fittingly expressed by Dr. Beverley Robinson[2] in his recent article upon this subject, in which he says: "Judged fairly in comparison with other drugs, I have come to regard creosote as the most valuable medicinal agent we have at the present time for the treatment of pulmonary tuberculosis."

Confronted by such evidence regarding the notable results claimed to have been obtained by the use of creosote in the treatment of this disease, we are naturally strongly led to inquire more fully into their nature.

A search into the literature of this subject shows that during the first and second stages of pulmonary tuberculosis the following results, with few exceptions, will slowly appear after a considerable time has elapsed during which the treatment has been faithfully maintained: Digestion markedly improves, the appetite is increased, the bowels are relieved of irritating ingesta, and the diarrhœa and constipation are overcome. As a natural result the nutrition is notably improved, the bodily weight increases from two to twenty pounds, and according to some observers the gain amounts to fifty pounds. With the increase in bodily weight there is a corresponding gain in the physical strength, and the disposition becomes more cheerful. The patient takes new hope and evinces a desire for bodily and mental exercise. Cough and expectoration lessen and finally cease. The fever decreases and the temperature is gradually brought to the normal point. Night-sweats diminish and soon disappear. The respiration becomes fuller and deeper, and the physical signs are gradually abated. Cardiac irritability is controlled, and in time the pulse regains its normal character. In fact, there is a very marked improvement in all of the physical signs and symptoms.

In many instances where benefit has not followed the use of cod-liver oil, the hypophosphites, and other approved remedies, very gratifying results have promptly followed the use of creosote.

While it is not claimed for this treatment that it has the power to arrest or cure the advanced forms of pulmonary tuberculosis, still it exerts in these cases a marked beneficial effect in palliating the symptoms and in retarding the progress of the tubercular process.

The dosage and form of administration of creosote vary considerably, depending upon the ability of the patient to bear the remedy, while more hangs upon the faith and courage of the administrator as regards the employment of this agent in medium or large doses. The German authorities favor a daily dosage of one-fourth to one drachm. In this country there is more timidity as regards the employment of large daily dosages, and as a consequence the results have not been so marked with us as with the Germans. This conservatism, however, is fast disappearing, and there are those among us who are giving the larger daily dosages with better results.

From all that has been written upon the subject it strongly appears that those physicians who have employed the larger doses of creosote have obtained better results than those using the smaller amounts.

Dr. Beverley Robinson, who is the pioneer in this country in the use of creosote, prefers small and frequent doses. He commences with doses of one-half to one minim, given three to four times daily, and gradually increases the frequency to every two hours, unless the stomach proves intolerant. He finds that few patients can bear a daily dosage of more than twenty minims, although one of his patients took sixty-four minims daily. His method is a very good one and commends itself on account of its safety, and is always capable of being pushed to the fullest extent compatible with the comfort of the patient.

Some prefer to give creosote in pill form, others in capsules, while there are those who favor various mixtures of this article. The better way is to give it in an alcoholic or vinous mixture. A noted German authority combines it with two parts of tincture of gentian.

Much of the success acquired from the use of this remedy is attributed to the employment of a reliable article, one of absolute purity manufactured from beech-tar.

I have employed the following formula with good results:

R.	Pure beech-tar creosote, Merck's	ʒ j.
	Fl. ext. gentian	ʒ ij.
	Comp. tincture of cardamom	ʒ j.
	Alcohol	ʒ ij.
	Simple sirup q. s. ad.	ʒ viij.
M.	Sig.: One teaspoonful as directed.	

After tolerance is established the quantity of creosote and gentian is gradually increased in the proportion given above.

I have made a prolonged and satisfactory trial of this remedy in a single case of pulmonary tuberculosis, the history and results of which are as follows:

About two and one-half years ago, Mrs. L——, aged thirty, with a family history of tuberculosis, had a severe attack of epidemic influenza with an imperfect recovery, following which her health steadily declined until the last of December, 1891, when she was seen and placed under the creosote treatment. At this time she presented the following symptoms and physical signs of disease: There was well-marked emaciation with greatly impaired muscular power. The cachexia was pronounced, the skin being of a pallid hue, while the veins were distended and of a dark color. The heart was in a very irritable state, and the pulsations, when the patient was quiet, numbered 120 per minute. The respirations were from 24 to 28 per minute, the inspiration being shallow and shortened, while the expiration was prolonged and harshened. There was unusual prominence of the clavicles and the infra-clavicular spaces were depressed, especially upon the left side. There was well-marked dulness over the entire left infra-clavicular region, with fine moist râles and exaggerated vocal fremitus. There was also slight, yet perceptible, dulness over the apices and the right infra-clavicular space. The normal vesicular character of the breathing was absent in these situations, particularly upon the left side, being replaced by the broncho-vesicular and bronchial breathing. There was cough, with moderate expectoration of a thick muco-purulent character. The hectic was well marked, night-sweats were exhausting the patient, and the outlook for the future was very unpromising. In addition to the foregoing symptoms, there was an aggravated form of dyspepsia and some diarrhœa alternating with constipation. She was given one-half drachm of the creosote mixture three times daily, which was soon increased to one drachm four times daily. From this time the amount was steadily increased, and at this date, July 10, 1892, the daily dosage equals fully eighteen minims of pure creosote. There has been no intolerance or discomfort at any time arising from the use of this agent, but, upon the contrary, the effect has

[1] Remarks made at a discussion of this subject at the regular Annual Meeting of the Medical Society of the County of Cayuga, held at Auburn, N. Y., June 9, 1892.

[2] On the Use of Creosote in the Treatment of Pulmonary Phthisis, MEDICAL RECORD, February 27, 1892.

been grateful to the patient and the results have been gratifying beyond expectation.

During the first two months of the treatment there was scarcely any improvement. Afterward, the improvement slowly manifested itself, and at the present time there is a marked change for the better. The nutrition has greatly improved, the bodily weight, which was 92 pounds when first seen, has increased until she now weighs 105 pounds—a net gain in six months of nearly fifteen per cent. of the entire bodily weight at the time the treatment was first instituted. The gain during the last two weeks has been slightly in excess of two pounds. With the increase in weight there has been a corresponding increase in the physical strength, and instead of being confined to the bed the patient is now able to be about the house, and walks and rides frequently in the open air without detriment. In place of depression of mind there is an animating hope of an early recovery. The appetite is improved, the diarrhœa was early arrested, the night-sweats are a thing of the past, the cough is controlled, the cachexia is fast disappearing, and the heart-action is no longer rapid, the pulsations now numbering 84 per minute. The respirations are lessened in frequency and fuller in depth. The dulness is diminished, and the other physical signs are slowly abating.

I have watched with more than ordinary interest the changes the patient has undergone from time to time during the six months I have had the pleasure of treating her. What will be the final outcome of the case, is a prediction that I do not at this time care to make. However, I will venture the opinion that recovery will not be fully and safely completed in less time than three or more years from the time that the treatment was first undertaken. Syphilographers claim that about four years of continuous treatment is required to fully and permanently eradicate the syphilitic taint. If this be true, is it reasonable to presuppose that the tubercular taint can be effectually removed in a shorter time? For my part, I believe not. I am strongly inclined to believe that many cases of tubercular phthisis can be cured when the treatment is faithfully and perseveringly extended over a long period—three to five years—and that, too, by other remedies than creosote.

In conclusion, I desire to state that I am cognizant of the fact that there are a few physicians who have tried creosote in pulmonary tuberculosis, and who claim to have achieved no better results with this agent than they have been able to obtain by the use of tuberculin. So far as I can learn, these observers have had only slight experience with this agent in the treatment of this disease, consequently their assertions are of little value.

I am also aware that, about sixty years ago, creosote was brought to the notice of the profession as a remedy of considerable value in the treatment of pulmonary tuberculosis, and after a short trial in which the results are said to have been good, it fell, as many other valued remedies have fallen, into disuse as a curative agent in the treatment of this disease. Notwithstanding this apparent failure of years gone by, together with the alleged want of success in recent times on the part of a few experimenters with this agent, still I am led to conclude from my slight experience and the large amount of reliable literature upon the subject, that at the present time creosote excels all other therapeutic agents or measures in the treatment of this almost incurable affection, pulmonary tuberculosis.

Prize for Essay on Tuberculosis.—The Congress for the Study of Tuberculosis announces a prize of three thousand francs for the best essay on "The Means of Diagnosticating Latent Tuberculosis before its Appearance or after its Cure." The essay must be written in French and sent to Dr. L. H. Petit, 76 Rue de Seine, Paris, before April 1, 1893. Each memoir should be accompanied with a sealed envelope containing the author's name and address.

THE ROCKY MOUNTAIN REGION FOR CONSUMPTIVES.

By EUGENE M. LITTLEJOHN, M.D.,

HONORARY FELLOW OF THE NORTH CAROLINA STATE MEDICAL SOCIETY, ETC., MONTROSE, COL.

There is no one disease that has occupied the mind of the medical profession for the past year or two as has phthisis pulmonalis. Since the announcement of Professor Koch's discovery, many and varied have been the remedies proposed for the cure of this disease. I don't propose, however, in this paper, to discuss the merits or demerits of any of these new therapeutic measures, or, in fact, any of the old ones either, except that of climate.

It is generally conceded that the consumptive, under any method of treatment, is very greatly benefited by a residence in a suitable climate, and by the proper surroundings in said climate. In fact, with many of the most careful observers this climatic influence is considered more potent for good than any or all the other measures resorted to.

What I shall have to say will be from the stand-point of the patient as well as that of the physician; and the conclusions reached are based entirely on facts as gathered from my own experience and direct observation of others while at these health-resorts. For about three years I have been a consumptive myself, and have been spending my time at the different health-resorts, both East and West. I hope to be able to give some points from this experience that will be useful to many of my professional brethren, who are so often called upon to give advice to the consumptive regarding change of climate, etc. If I had had access to these details at the beginning of my attack, I am sure it would have been of vast benefit to me, and would have prevented my making many mistakes that have cost me dearly in many ways. It is my desire to allow others to profit by my experience that impels me to write this article.

To begin: I will state that the section of country possessing the most beneficial climate, in my opinion, for consumptives generally (unless they have passed the stage where permanent improvement is possible), is what I may call the Rocky Mountain Region. I mean by this the elevated section of country amid and on both sides of the Rocky Mountains, extending from El Paso, Tex., or the southern line of New Mexico, north through the whole of New Mexico, Colorado and into Wyoming. In making this statement I must say that I have not arrived at this conclusion by studying the meteorological reports of the different sections, or by other theoretical means, but entirely by results that I have observed. For instance, the convincing proofs, to me, of what this climate will do for consumptives are the "living examples" that can be seen all over this section. I don't know of a town in all this district that does not have several inhabitants, and often many, who came to this country as consumptives, and who are now enjoying good health, and in many cases robust health. The number of such persons one meets is so large that it is quite convincing. In many instances they are physicians, and other cases that are entirely authentic. Many of these cases were in the advanced stages when they came.

If we go to analyze the climate itself, it has many objectionable and disagreeable features; but I think it does more for the consumptive than other places with which I am acquainted. I don't mean to argue that there are no good climates for consumptives in the East and elsewhere. There are noted resorts in the East, at which I have been myself, and where the climate is very fine, and so much better than the place from which the patient usually comes that most patients seem to improve, at least for a time, and some do recover. But I have not been able to observe the proportion of recoveries which take place in the section above mentioned, although I have had opportunities of observing. The fact is, occasional recoveries do take place almost everywhere; but I can recall very few permanent cures that have occurred

east of the Rocky Mountain district—very few at least in proportion to the number of cases. Some may argue that more consumptives go to this section than to any other. This may be true, but this is a big country, and they are scattered all over it, from El Paso to Wyoming, an area of nearly one thousand miles in length and several hundred miles wide in many places.

It often happens that a patient is sent by his physician "to Colorado" or "to New Mexico." The patient in the first instance lands at Denver, Pueblo, or Colorado Springs. He remains there for a very limited time, and decides that Colorado does not agree with him, as he can see no great improvement He is probably a little homesick anyway by this time, so he pulls out for home, and it goes on record that this patient was not benefited by Colorado

If he is sent to New Mexico, the same thing may happen at Las Vegas, Albuquerque, or Santa Fé. Now, in the first place, anyone who has seen much of these patients in this section has noticed that it is the exception for a consumptive to receive much real benefit before he has been here about six months, though, of course, the exception may occur. In many instances the patient comes expecting to accomplish his object and return home within six months, and often earlier. This, of course, is great folly, even if he does greatly improve. If a patient should come to one of these towns and find it did not agree with him, he should try elsewhere.

As already stated, this is a great section of country and necessarily contains many variations in climate as well as altitude. It is often the case that one part of Colorado will not suit a patient, while some other place, either higher or lower, as the case may be, seems to suit him exactly. Yet it would be rather indefinite to tell a patient to go to Colorado or to New Mexico and hunt around until he finds a place to suit him, and it might consume much valuable time as well as money. So I will mention some of the more important towns, each representing a certain section, and will give the leading features of that town or section. This, I hope, will enable those unacquainted with these localities to select the place best suited to any individual case, and in case the first place does not suit, he can select the next place most likely to suit him which can be reached with the least amount of travel. Having a knowledge of these conditions at different places will save much time and expense in travelling around, which with many patients is an important matter.

Beginning at the southern end of this district, there is El Paso, Tex., which is on the border of Texas, New Mexico, and Old Mexico. This little city has an altitude of 3,717 feet and a most desirable winter climate. Very good accommodations are to be had, there being many hotels and private boarding-houses.

Following the Rio Grande River and the Atchison, Topeka & Santa Fé Railroad north forty miles, brings us to Las Cruces, N. M., situated in the beautiful Misilla Valley. This climate is much the same as that of El Paso, but I think has some advantages over the latter; the accommodations, however, are much inferior to those of El Paso, and its location is slightly higher. It is my opinion that as winter-resorts these places have no superior. The climate here being milder and the altitude lower than in any other part of the Rocky Mountain section, makes it especially suitable for the more advanced cases, and as a starting point in winter for most cases. If it is thought at any time that a higher altitude is needed, it can be had very conveniently by going north via the Santa Fé Railroad, which has a gradual ascent all the way north to the Colorado line, so that any elevation desired, between that of El Paso and seven or eight thousand feet, can be tried in succession if desired. And this course is always convenient to patients when summer opens and it gets too warm here for comfort.

In speaking of these places as winter-resorts it is meant that the climate is desirable for fall, winter, and spring. It is only during the heat of summer that it becomes unpleasantly warm—this applies to all places spoken of here as winter-resorts—so that many adopt the plan of remaining all the year at Las Cruces, for instance, until the weather gets too warm, and then they go camping in large parties to the Organ Mountains, which are only twenty miles distant, and a pleasant drive. This, again, is desirable for more advanced cases, since the benefits of the mountains for summer can be had without reaching the high altitudes that are found in the mountains farther north.

Following the railroad north, as before stated, there is a gradual ascent. I will mention only a few of the more important places. Socorro is about one hundred and thirty-five miles north of Las Cruces, and is a very pleasant place, especially for the winter. Its altitude is about four thousand six hundred feet. About seventy five miles north of this place is the commercial centre of the Territory—Albuquerque. Here almost every kind of accommodation can be had, and the climate is a particularly good one for winter. The elevation is medium (4,949 feet), and is well adapted to many cases. Proceeding still farther north, about eighty miles, we come to the Territory's ancient capital—Santa Fé. We have now reached an elevated section of country; this little city having an altitude of 7,046 feet, is, therefore, more desirable as a summer-resort, although many cases, especially early ones, or those who have become accustomed to high altitudes, do better at a place like Santa Fé, even in winter, with its cold, bracing air. Good accommodations are to be had here.

About sixty miles farther northeast is Las Vegas, which is quite noted as a resort. Its altitude is 6,398 feet, and what has been said about Santa Fé may properly be said also of this place. Six miles out from Las Vegas, connected by rail, are the famous Las Vegas Hot Springs. Here is to be found one of the handsomest and best appointed hotels in the whole country. It is built of stone and owned and operated by the Santa Fé Railroad Company.

About one hundred miles north, near the Colorado line, is Raton, N. M., which is a very desirable point for those requiring an altitude of 6,636 feet. After crossing the Colorado line the railroad descends again, so that when the next town of importance—Trinidad, Col.—is reached, we find an elevation of only 5,944 feet. This is a small city of some importance, and its climate is well suited to many cases. Descending still, ninety miles north, brings us to Pueblo, the city having about the lowest altitude of all the places of importance in Colorado—so far as I know—4,669 feet. Now I consider Pueblo the best starting-point for Colorado, as El Paso or Las Cruces is for New Mexico. And the northern New Mexico points can also be conveniently reached from here. When a patient starts west in the late spring or in summer, I think it is better to go to Pueblo than to southern New Mexico; and with the patient not too far advanced, this course is often preferable even in winter or fall. As a winter climate that of Pueblo is one of the best in Colorado, and this place offers excellent accommodations.

Colorado Springs is forty-five miles north, and has an altitude of about six thousand feet. This is one of the loveliest little cities to be found anywhere. It is strictly a residence city and a resort, containing many first-class hotels and boarding-houses. It is rather an expensive place to live in, however. This is an all-year resort, but is especially pleasant in summer.

Five miles from here is Manitou Springs, which is the Saratoga of the West. It has elegant hotels, but is more of a fashionable pleasure-resort than a resort for consumptives.

Denver is only seventy-five miles north of here. Its altitude is 5,196 feet, and many find it especially desirable to spend the winter here. For those who are able to do business, it offers more opportunities than other places. The climate is excellent, though somewhat colder in

winter than that of Pueblo. Denver is an elegant, modern, and growing city, and is a most pleasant place for those who have recovered sufficiently to do business to make their home; or for those persons whose health has not been sufficiently impaired to necessitate their giving up business entirely.

There are many smaller towns north and west of here, both in Colorado and in Wyoming, offering many advantages in different directions. I will not undertake to enumerate them, as the person who goes to Denver can learn here all the particulars desired.

From Pueblo, about forty miles west, and up the Arkansas River, is the town of Cañon City, which I must not pass without mention. It is a beautiful town, of about three thousand inhabitants, and, in my opinion, offers more advantages as an all year resort than any other place here mentioned. Its altitude is 5,344 feet, which is a good medium one. According to the reports of the United States Signal Service it has the mildest winter climate in Colorado. This is due largely to its sheltered location, the surrounding mountains breaking off the cold winds. It is reached from Pueblo via either the Santa Fé or the Denver & Rio Grande Railroads.

Proceeding west via the last-named railroad, across the continental divide, we come to some sections of country offering many varieties of climate and altitude. The most important of these suitable for a winter residence are Montrose, Grand Junction, and Glenwood Springs, with altitudes respectively of 5,793, 4,583, and 5,200 feet. The first and last named places are also particularly valued as all-year resorts. They are all very thriving towns, with good hotels, etc., and are located in the fruit growing section of the Western Slope. Each of these towns is surrounded by fine agricultural communities. The principal reason that these towns of the Western Slope are not more frequented by consumptives from the East is, that in order to reach them it requires a journey by rail over very high mountain passes—Marshall Pass, for instance, being 10,852 feet. For this reason many are afraid to attempt the trip. But I think those with early cases need have no fear of it after having become accustomed to a moderately high altitude. It is often the nervous fear of the person that causes most of the trouble experienced in crossing these high elevations. The most of the sections mentioned are the ones considered most suitable for winter and all-year resorts; but as suggested in speaking of Santa Fé and Las Vegas, many of the more vigorous patients do better, even in winter, at points with an elevation of 7,000 or 8,000 feet, and some few even higher (this is of course exceptional). Many towns of this class are to be found here in Colorado, as, for instance, Salida, Aspen, Ouray, Gunnison, Durango, etc.

Then, as summer opens, it is desirable for those who are in the larger towns or warmer sections to get out to the mountains. Colorado is full of these summer-resorts, and many of the most approved can be reached by the various lines of the Denver & Rio Grande Railroad. I will not speak separately of them. The railroads issue handbooks giving full information about them. I will say that the most of them vary in altitude from six thousand to over eight thousand feet. Many of them possess excellent facilities for hunting and fishing. It is very desirable to get patients out in camping parties where fishing or hunting can be pursued. Often wonderful improvement is noticed after one of these trips of "roughing it." The person who went out looking so delicate comes back bronzed and tough. The various towns above mentioned are named just as representatives of certain localities, and, of course, it is not meant that they are superior to many other places not spoken of here.

The question now arises, What is the patient to do after he arrives at a suitable place—what kind of life is he to lead? This is an important question which puzzles many. Often his physician has simply told him to "go to Colorado," or "to New Mexico," and take all the exercise he can, and live out of doors. This kind of advice has often injured the patient. He over-exercises, regardless of the fever it is causing, and therefore grows worse constantly. Still, I don't approve of starting a patient with a thermometer, as he will then be watching his temperature continually and worrying over it. The most favorable cases, I find, have some rise of temperature in the evening, if they are exercising at all. I think it best not to tell a patient that he is subject to fever (he often does not know it), but to explain to him not to exercise enough to cause a dull headache, heavy, dragging sensation in the limbs, etc. These sensations are sure to express themselves if he is having fever enough to be harmful, that is, if it goes over 100° F. Others go to the other extreme, and tell them not to take enough exercise to cause any fatigue. I don't think it possible for a consumptive to take enough exercise to be of any benefit without producing some fatigue. And I know from my own experience that there is a great difference between the feeling of natural fatigue and the dragging sensation caused by fever.

I am convinced that the best thing for the consumptive to do, as early as he can after arriving, is to get out of town. Even if he is able to stop at the best hotel in the city, there are many reasons why he would do better to get out into the country, if he is in condition. The most objectionable features of this climate, all over, are the winds and the dust, especially in the spring. In town, where there is constant travel on the streets, there is no chance to avoid the dust, and the only place to escape it is in the country, where there is usually very little. Of course the amount of wind depends largely upon how well the place is sheltered by mountains. Another reason for getting out is, that a person in town is very apt to continue the same habits of living that he was accustomed to at home, or, at least, he will lead a very aimless life, with nothing to do, and nothing to think of but his complaint. He is told to live out of doors, but he cannot walk far without tiring; the same with riding; and if it is winter he finds it too cold to sit out. So let him get board at some nice ranch (all farms are called ranches in this country). It need not be far from town. Let him make up his mind to take an interest in what is going on, and as he feels like it, help to attend to the poultry or the horses; or, if he is able, assist in riding after the cows, etc. There are many little things which may occupy a person on a farm, and which will keep him out of doors and at the same time afford him occupation and amusement. This is surely much better than to be lounging around, taking exercise—when it is taken—with no other motive than to be exercising. Then the amount of exercise can be regulated to suit the case or condition; the dust is avoided and the purest air is breathed. Nearly all these towns are surrounded by suitable ranches, whose proprietors are often willing to take one or two or more boarders. If the ordinary ranch fare is not suited to his digestive powers, arrangements can be made for any extras required, and if the place is not too far from town, he can amuse himself riding or driving in for his "extras" or for his mail. But if he gains, as many do, after this plan of treatment, he will soon get so that he can digest whatever is put before him.

As already suggested, it is also an excellent plan, for those who are vigorous enough to stand it, to go out to the mountains in summer, camping where there is good fishing and hunting. If a camping party cannot be organized, then there is good sport to be had at many of these summer-resorts, especially in remote and newly opened mountain districts, on or near the new lines of railroad.

One of the most important, and often difficult, tasks the physician has to perform in these cases is to impress it upon the mind of the patient that he must remain permanently in this country. Even if it has resulted in a perfect cure, it is most hazardous for him to return home, unless for a very short visit, and during a favorable time

of the year. While admitting that a person may regain his health and return home without ever having a return of the disease, yet the chances are so much in favor of the opposite result that no person can afford to run the risk. This has been demonstrated only too often. After a person has regained his health it is not necessary to be confined to any one special place, and he need have no trouble in finding a place in this great section where it will be both pleasant and profitable to live. If he prefers a residence in a city, he is indeed hard to please if Denver, Pueblo, or some of the smaller cities of the district do not satisfy him. Of course no one intends to convey the idea that this climate will cure, or even relieve, all cases, and those cases which have failed to be benefited, after a fair trial here, of course should go elsewhere. But, as stated before, marked improvement must not be looked for too soon, or until several different varieties of climate have been tried, if need be.

The last, "but by no means least," question I wish to touch on, is the advisability of sending young people, who have marked hereditary or other predisposition to lung disease, to this elevated district to live, before the disease has developed. This may seem to some people as going to an extreme, but I look upon it as one of the most pressing duties of a physician, when he sees among his clients a young man or girl, who he knows has inherited this tendency to consumption, and whose general make-up shows how fully this tendency is possessed (it is not difficult to see), I say it is the sacred duty of the family physician to advise this young person, before the disease takes hold of him, to change his residence to a suitable climate, where it has been proven that the chances of developing phthisis are reduced at least ten to one, and I think more. The person and family should be given to understand the case as it is. There are few physicians who cannot think of such a person among the families under their care—a young person, who, under the existing conditions, he knows does not have one chance in five of escaping phthisis before passing the dangerous age. When one of these young persons begins to lose flesh and feel tired, or becomes subject to very frequent "colds on the chest," then it is especially important to send him at once to the above section, before the disease has progressed sufficiently to be recognized by physical examination. Fortunately a great many have seen the wisdom of this course, and many are the lives that have been saved thereby.

Many people claim that they are not able, financially, to take advantage of this course, but when they consider what is involved, no sacrifice should be considered too great. In the case of a boy, he had better come here without a cent than to run such a risk. If he has come early enough, he can, at least, work for a living, and there is no country affording better rewards for industry and offering better chances for advancement than this.

Cannabis Indica in the Painful Diseases of Women.—Dr. J. B. Mattison, of Brooklyn, praises cannabis highly as an anodyne and hypnotic. It is not a poison; there is no fatal case on record. It must be given in full doses. Small doses are stimulating and exciting; large ones sedative. It is equally useful in dysmenorrhœa, especially of the spasmodic variety, and in painful chronic metritis. In many cases of uterine cancer it allays or prevents pain. It acts well in megrim, in the neuralgias, and headaches so common in anæmic women. It is a safe and excellent hypnotic in insomnia. The tincture must be given in doses of twenty to sixty minims, and of the solid extract, one half to two grains. Farlow recommends the following suppository in dysmenorrhœa, to be introduced every night, beginning five days before the time of the period.

℞. Ext. cannabis indica,
Ext. belladon ..... āā gr. j.
Ol. theobrom ..... ʒ jss.

—*The Birmingham Medical Review*, June, 1892.

THE SPECIFIC ACTION OF DRUGS.[1]

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The word specific, as applied to remedies, may have one of two meanings: it means either that the remedy is of infallible efficacy in the cure of a particular species or form of disease, as mercury in syphilis, or it has a special action on some particular organ, as digitalis on the heart.

It is in view of the progress made in our knowledge of the special action of remedies on particular organs or fluids of the body that we felt justified in bringing the subject to your attention, in the form of a report, from this Section, upon the specific action of drugs.

One has but to look over the prescription files in our drug stores to see the desire on the part of the profession for drugs that will do special work. This desire, enhanced by increased knowledge, has done away with the prescriptions of former days, and a few drugs combined for a definite object is the rule rather than the exception.

The desire for specific remedies has always held the foremost place in the medical mind, and it is stronger today than ever before. Dr. John Brown—the Brunonian theory—"assumed that man and other animals possess a peculiar property, termed excitability, by which they are distinguished from inanimate bodies. The agents which support life he termed exciting powers, and these, acting upon the excitability, maintain life. . . . When they, the exciting powers, are in due proportion, health is produced. Diseases arise from either excessive or deficient excitement. . . . According to this doctrine, all medicines are stimuli, and differ from each other in the degree in which they exert their stimulant power—moreover, they are supposed to cause exhaustion by producing previous over-excitement." The whole subject is here made very simple, its extreme simplicity throwing it open to attack. Thus the contra-stimulant, or new Italian, doctrine came upon the stage. This admitted of two classes of medicines, the one called stimulants or hypersthenics, the other contra stimulants or hyposthenics. . . . Contra-stimulants obviate or counteract the effects of stimulants. The desire of such theorists was to regard the body too much as an entity, and not as made up of many and diverse parts inextricably interlocked. The endeavor to look upon the body as a mass of living matter, to be influenced as a whole, was justifiable when a full knowledge of the body was not possible. Our increasing knowledge of the body and of the action of remedies has caused us to gradually abandon the field, until, now, we no longer look for a drug or any combination of drugs that will act as a specific, in the sense that it shall cure a diseased condition, but more and more we look for remedies that will influence for good, not the body as a whole, but specific organs, fluids, or tissues, and thus influence the diseased bodily condition indirectly. Few remedies seem to act directly in curing diseased conditions, as the cinchonas were formerly supposed to do in the various forms of malarial fevers. Headland, in defending himself for putting quinine among restorative hæmatics, quotes at great length Dr. Bence Jones and others, in order to show that a substance like quinine exists in the blood. It was a great advance to lift quinine from its former position, as a specific for the cure of a definite disease, to an agent which simply replaced in the blood a something lost by disease; at the present day we seem to have advanced still further, and quinine is given a definite place as a specific, in that it influences, in a way not thoroughly understood, the growth and development of the germ of Laveran. Recent investigations have thus tended to fully confirm the position of quinine as a specific, only instead of placing it with the

[1] Read before the Medical and Chirurgical Faculty of Maryland, Section of Materia Medica, etc., April, 1892.

restorative hæmatics it more properly takes its place with the germicides. Note, then, the progress that has been made: we are better qualified to diagnose malaria than ever before, and we have in quinine an agent which tends to destroy its cause.

In diphtheria and kindred conditions which might be noted, the chain seems complete, except the last link; we seem to know the cause of the disease, and that the killing of the micro-organisms, or a neutralization of their life-products, would result in a cure; the conditions all seem fulfilled, except the agent which is to act as the destroyer of the cause. The indications are strong at this time that such an agent will be found.

It is difficult at the present day to think of the specific action of drugs without assigning them a place, either as the destroyers of micro-organisms or the neutralizers of the products of their life; no one need, however, be told how great has been our disappointment in this direction. The future, if one may judge from the signs of the times, has much in store, and the new hygienic laboratories promise, in the investigation of the products of bacterial life and the antidotes to the poisons thus formed, much that is of value in ennabling us to treat diseases by destroying their cause. The chemistry of the body is about to assume an importance unknown before, and doubtless in this direction we are to see new fields opened up for the display of the specific action of remedies. The accessibility of the intestinal contents has caused them to be carefully investigated by the bacteriologist, and he seems here again to have opened up a new field for the specific action of drugs. If we can differentiate between the various micro-organisms which produce intestinal disorders, and are able to say whether any diseased condition of the gastro-intestinal tract is caused by bacteria or not, we will be able to apply our remedies with a precision heretofore unknown. This field for the specific action of drugs cannot be better brought to your attention than by noting the remarks of Cantani: "Except in very rare cases," he says, "the destruction of the pathogenic micrococci in the living body will never be realized. All that is required at present is to produce an unfavorable soil for the growth of the micrococci, so that their rapid reproduction may be checked or diminished. . . . Antiseptics may only be given by the mouth when they are not changed or absorbed by the stomach or upper part of the small intestine, so that they reach the ileum unchanged, which is always the seat of the disorder. For this purpose doses of calomel have been used, but set aside as unpractical except in infections of milder form. Bouchard has recommended large doses of finely powdered carbon, napthalin, finely powdered iodoform, and salicylate of bismuth. These substances, given in sufficient amount, can effect an antiseptic action on the fæces, but not, since they are insoluble, on the walls of the intestines. . . . Disinfecting fluids like carbolic acid and corrosive sublimate, given per os, can never produce complete disinfection of the intestines, . . . the only way left is per anum. . . . This is the best way to apply antiseptic fluids which are intended to come in direct contact with disease germs. . . . For antisepsis of the intestines all substances soluble in oil and water may be used. The same applies to astringent preparations, such as alum, salicylic preparations, thymol, aseptol, zincum sulphophenicum, boracic acid, hydrochloric acid, sulphite, and hyposulphite." Cantani speaks well of gallic and carbolic acids. Of gallic acid as being successful in intestinal catarrh with diarrhœa, in dysentery, and typhoid fever. He speaks of a two per cent. solution of carbolic acid with quin. hydrochlor. as a preventive of the development of typhoid fever.

To supply what is lacking in our treatment of diseases of the intestinal tract we must look to a fuller knowledge of the chemistry of the intestinal contents.

As surgery took giant strides after Lister announced his great truth, so we have every reason to believe that the results of bacteriological research, supplemented or completed by the work in hygienic laboratories, will give us a greater point of vantage than we have ever enjoyed before. We will use the drugs we do use with more precision, and lay aside our drugs with more confidence in conditions where they are not indicated. The progress made in assigning to diseases specific causes makes us content with our symptomatic methods of treatment while waiting for new drugs, or the new application of old ones, which shall have the power of exerting specific influences upon the causes already known.

Dr. Abbott, in speaking of immunity, says "that in the serum of the normal circulating blood of many animals there exists a body that is capable, outside the body, of rendering inert bacteria, that, if introduced into the body of the animal, would prove infective. That in many instances infection may be looked upon as a contest between the bacteria and the tissues, carried on on the part of the former by the aid of the poisonous products of their growth, and resisted by the latter through the agency of proteid bodies normally present in their integral cells. That when infection occurs it may be explained either by the excess of vigor of the bacterial products over the antidotal or protective proteids eliminated by the tissues, or to some cause that has interfered with the normal activity and production of these bodies by the tissues. That phagocytosis, though frequently seen, is not essential to the existence of immunity, but is more probably a secondary process, the bacteria being taken up by the leucocytes only after having been rendered inert through the normal germicidal activity of the serum of the blood and other fluids of the body."

In this almost unexplored domain of immunity there opens up many possibilities for the display of the specific powers of drugs.

As an example, we are in a position to believe that, in so far as the specific influence of cod-liver oil and creosote in the treatment of phthisis are concerned, they may act by increasing the antidotal or protective proteids eliminated by the tissues. Brunton says, in speaking of cod liver oil in inflammations, as bronchitis, newly developed cells are present in great abundance, but nutrition is so defective that they cannot take on the character and functions of mucous cells, and hence, in order to allow them to form a new mucous membrane, they must be supplied with a readily assimilable nutritive material. This is probably the explanation of the benefit obtained by the use of cod liver oil in bronchitis and other diseases dependent on malnutrition.

There are many conditions which we are called upon to treat that can have no relation to either bacteriological or chemical causes, such as the valvular heart diseases, the many forms of destructive kidney affections, etc. These seem to present the most unfavorable field for the action of specific drugs; the drugs to be effective must be specific in the sense that they influence special organs.

From our present knowledge in regard to this large class of cases, we may quote from Dr. Goodhart, in an article on the treatment of Bright's disease:

"It is always a thankless task . . . to question the value of any particular treatment by drugs. . . . But it is well to ask ourselves occasionally what we are really sure of, for, unless we do, there is a certainty of our being ultimately effaced by routine, and there are few things worse than that for the patient. And I incline to think that routine has laid too much hold upon us in renal disease. . . . There is no drug of which we can say that it will 'go for' the inflammation; there is no drug, that I know of, that can be depended upon to lessen the output of albumin. Thus it is that we have to depend upon indirect measures, . . . and it is just in the reactions to these measures that the individualism of the patient appears, and I should be glad to hear it stated on authority, what it is difficult to find in books, that even such simple measures as these, valuable as they are in their place, are measures often of severity, to be applied with judgment. . . . Who cannot recall the

memory of cases where pulv. jalap co. has done unmitigated harm? where vapor baths, instead of relieving, have increased the distress? where fluid diet as a means to diuresis has repeatedly upset what little power of digestion remained to the patient? where individualism revolted at the upset of habit?"

What we believe to be true of the kidneys is true of other organs; their diseased conditions are least likely to be influenced by specific remedies. In such conditions the individualism of the patient most forcibly asserts itself; we learn most emphatically the uselessness of drugs in effecting a cure; we are taught to select from the materia medica a few drugs, not as specifics, but as aids, often of secondary importance. Food, clothing, regular habits of life, care and attention to individual habits, and the observance of hygienic laws, are of primary importance; our drugs being used simply to meet special indications as they arise, and in this sense only do they deserve the name of specific. No one can speak of the specific action of drugs without a reference to mercury in syphilis. Our advance here has not been as great as we had a right to expect. A disease presenting such well-marked symptoms as syphilis, and a drug, such as mercury, having such control over it as to lead Dr. Bulkley to say "that mercury alone possesses the true anti-syphilitic power," would seem to possess advantages for the study of the specific action of drugs equal to that of quinia in malarial fevers. The report from the Buda-Pesth laboratory, that a certain bacillus has been found in syphilitic growths of various kinds, may help to solve for us the cause of the disease; but at present Dr. Bulkley about covers the ground when he says: "During the early stages of syphilis, iodine, with its compounds, seems to exert very little effect, whereas the results following an active and efficient mercurial course are often most striking and satisfactory. . . . My more common method of treatment of the later manifestations of syphilis is by means of the old mixed treatment, where a minute dose of mercury is combined with a moderate dose of an iodide, with iron, and a bitter tonic; if the symptoms do not yield, the active elements of the treatment are increased until the desired effect is produced."

We have thus endeavored, in the brief time allotted us, to indicate the general line of advance in our study of the specific action of drugs. We have purposely refrained from considering individual drugs, as that would have opened up too vast, and, in many respects, uncertain, a field; moreover, the practical application of the individual drugs are more or less familiar.

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Extirpation of the Larynx.—The number of cases in which the operation of removal of the entire larynx has been successfully performed is gradually increasing. The latest of these was recorded by Professor Wolff at the recent session of the Surgical Congress at Berlin, where the patient was exhibited eight months after the operation. The interest of the case is enhanced by the fact that, by means of an artificial larynx, invented by Professor Bruns, the patient is able to speak and sing, as illustrated before the Congress by his recitation of a monologue from Schiller's "William Tell" and his singing of "Gaudeamus igitur."—*Lancet.*

Sanitation of Cemeteries.—M. Brouardel, the Dean of the Paris Medical Faculty, M. Ogier, and M. Du Mesnil have reported to the Academy of Medicine concerning the sanitation of cemeteries. Their investigation has demonstrated that the speedy or slow destruction of the corpse is in direct proportion to the quantity of air which reaches it; in chalky soil, through which air permeates with difficulty, dead bodies become transformed into a fatty substance, *gras de cadavre*, which lasts five or ten years; but if air freely circulates about dead bodies they are completely destroyed at the end of a year, owing to the action of certain insects.

Clinical Department.

ECTOPIA TESTIS, WITH AN ILLUSTRATIVE CASE.

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E. C. S——, aged forty-seven, clerk, married, but always childless. The testicles have never descended into the scrotum. He has always had some sexual desire, but never very strong. He never suffered any inconvenience by reason of the malposition of the testicles until winter of 1888, when he began to have attacks of pain and swelling in the left one. These attacks increased in frequency and severity, until walking, or, in fact, any movement, became well nigh impossible and life was a burden to him. After a faithful and unsuccessful trial of all other means, this testicle was removed from the groin by a surgeon of this city, in May, 1889.

The operation was successful, and relief was immediate and lasting until December, 1890. At this time the patient began to have attacks of orchitis in the remaining testicle, which, in spite of treatment, gradually became so severe that his general health began to suffer, and he begged that this testicle might be removed to end his sufferings.

Examination revealed the following conditions: Spare but fairly well nourished. Family history good. Mitral systolic heart murmur, but vital organs otherwise normal. Scrotum rudimentary. Penis under-sized but fairly well developed. Well-healed scar in the left groin from former operation. In the right groin an oval subcutaneous tumor, about three inches long by one in width, extending in a direction upward and outward from the inguinal ring. The tumor was very tender and intolerant of manipulation, but firm and solid to the feel. It was quite freely movable in the direction of its long axis, and somewhat so transversely, but could not be lifted from its bed. There was no particular impulse on coughing, and no signs of the presence of the intestine either behind or in front of the tumor could be detected. He has had but an extremely feeble sexual desire since the removal of the left testicle, and practically none since the one in the right groin became involved. It was the patient's earnest wish to have the organ removed, and, considering the inflamed condition, its functional inactivity, and the un success following a faithful trial of all other means, his request was acceded to. By way of parenthesis, it may be added that an element of no small weight in reaching this conclusion was the fact that the patient's wife had undergone an operation for removal of both ovaries and Fallopian tubes early in 1889.

From a Malthusian stand-point Mr. S—— and his wife may now be said to constitute an ideally perfect couple.

The operation was performed on March 5, 1891, by Professor N. F. Graham, assisted by Dr. T. A. R. Keech and the writer. The parts were carefully disinfected and every precaution in the way of sterilizing hands, instruments, ligatures, and dressings was taken. Upon incision the testicle was found to lie half within and half without the external inguinal ring, and to be enlarged, inflamed, and very vascular. It was firmly grasped at its centre by the pillars of the ring. The constricting bands having been divided by a few touches of the knife, the testicle was released. The cord, which lay at the back of the tumor, was very short, and entered the organ at its centre. The testicle was carefully freed from all adhesions, until only the cord remained. A stout control-ligature was passed through this and the ends tied. The cord was then firmly compressed between the blades of a thumb-forceps and cut. No hemorrhage followed, but as a measure of precaution the stump was transfixed by a double silk ligature and each half separately tied off *en masse*. A drainage-tube was inserted, the edges of the

wound being carefully approximated by deep and superficial sutures, and a dry dressing of iodoform and gauze and sterilized absorbent cotton applied. The convalescence was rapid and uneventful.

Retained testicle, while not an uncommon condition in infants and children, is not frequent in adults, the usual course of things being for the organs to descend at puberty, if they have not done so before. When found in adults monorchism is the rule, and complete cryptorchism the exception. Either one or both testicles may escape from the inguinal canal and lodge in the abdominal wall, the femoral canal, or the perineum. This form of malposition is known as ectopia testis, and is quite rare.

The causes of non-descent or retention may be broadly classified into two, viz., 1, arrest of development; 2, mechanical obstacles. Among the latter may be enumerated small inguinal rings, a short spermatic cord, a transverse position of the testicle, non-communication between abdomen and scrotum, and blocking of the internal inguinal rings by a coil of intestine, or even by one of the kidneys, as in a case reported by Birsch-Hirschfeld. Chelius and others of the earlier writers state that when the testicle is retained in the groin the cord will be found to be very long. In the case now reported, as in that of Hubbard, noticed further on, the cord was, on the contrary, found to be very short.

The retained organs, particularly in ectopia testis, are much exposed to blows and other injuries, and are very prone to undergo malignant degeneration. Most of the operations reported have been for malignant disease. When the testicle descends before puberty its descent is apt to be followed by a knuckle of intestine causing a hernia.

In Hubbard's[1] case the retained testicle was complicated by a large multilocular hydrocele, the cord being short. Attacks of orchitis in misplaced testicle are not infrequent, as in the present case, and when they do occur, are apt to occasion great pain and suffering, particularly if the testicle be trapped by fascia or clasped by the walls of the inguinal canal.

The question of operative relief for this condition resolves itself into a choice of one of three methods of procedure, viz.: 1, To push the testicle back into the abdomen and retain it by a truss; 2, to bring it down into the scrotum and fix it there, or, in case the scrotum be rudimentary, to form a new scrotum from the integument of the thigh; 3, to remove the affected organ. Against the first method there was urged by the older writers, particularly by John Hunter, the objection that a testicle in the abdominal cavity was incapable of functional activity. Numerous instances, however, of cryptorchids with full virile powers have completely disproved this somewhat fanciful assertion, and the generally accepted opinion now is that simple non-descent or retention, uncomplicated by degeneration or atrophy of the organs, is no bar to full virility.

In cases where a loop of intestine is found to be adherent to a retained testicle, the proper course is to push both back into the abdomen and apply a truss. If no adhesions exist between the testicle and the gut, a truss may be applied, with a small pad above the testicle and below the gut, in the hope of forcing the former down and keeping the latter back.

In cases where the testicle is in the groin and is not diseased or functionally inactive, an attempt may be made to bring it down into the scrotum and fix it there, particularly if the scrotum be roomy enough. Williams,[2] of Brooklyn, reports a very successful case of this character. If the scrotum be rudimentary a new one may be made, by a plastic operation, from the skin of the thigh. Unless imperatively demanded, it would seem that the risks run by this operation were not justified by the ends sought to be attained. A testicle in the groin, if not diseased, is as good functionally as one in the scrotum, and if diseased its entire removal is indicated. In Williams's case the operation was done largely as a moral measure, to give the patient the assurance that he was a full and perfect man.

The question of inguinal castration is one which in the past has excited a great deal of controversy, more so than it is ever likely to do again. The weight of opinion among the older authorities was to the effect that the operation was much more fatal than scrotal castration, and that it was to be avoided except when absolutely demanded.

Monod and Terillon,[1] in 1880, gave this question careful study, and analyzed the cases recorded up to that date. They show conclusively that the mortality does not depend upon the operation itself, but upon the causes necessitating operation (an analysis of forty-two inguinal castrations for tumors of various sorts showing a mortality of sixteen per cent.), but that most of the deaths were the result of an extension of malignant disease. They believe the operation perfectly justifiable in cases of pain and swelling, and give fifty cases with only one death from peritonitis.

The cases upon which these opinions were based were taken from the older literature of surgery; and if upon such a record as this the operation was pronounced justifiable, there should be no question as to its propriety at this date.

Cryptorchism is not uncommon in the lower animals, and medical literature, particularly the French, contains many articles upon this condition and the methods of operation, which do not differ essentially from those practised upon the human animal.

The castration of women is popular at present, and the castration of men is sometimes necessary, but I have not been able to find a case in which both man and wife have lost the organs essential to conception.

[1] Toledo Medical and Surgical Reporter, 1888–89, ii., 385.
[2] MEDICAL RECORD, 1889, xxxvi., 631.

[1] Arch. Gén. de Méd., Paris, 1880, cxlv., 129–149, 296–307.

REPORT OF TWO CASES OF "HEMIALBUMINURIA."

By E. L. JONES, M.D.,

FLORENCE, ALA.

On November 19, 1889, I examined, for life insurance, Mr. J. C. J——, aged about thirty-five, mechanic; a man of perfect physical development, good family record, and previous perfect health. Upon testing his urine I was astonished to see a dense white precipitate from nitric acid; proceeding to apply the heat-test, a few drops of acetic acid were added, which also gave a dense white precipitate, and upon heating, each precipitate entirely cleared up. In other respects the urine was normal. Not knowing what I had found, I proceeded to look the subject up, and ascertained that it was first discovered by Dr. Bence Jones in a case of osteo-malacia, and by him named hemialbumin; others have given it different names.

The second case was that of a mulatto, aged thirty-seven, who presented himself on November 26, 1891, on account of a general malaise and lassitude, with headache; urine, scanty. Three years before, I had treated him under exactly the same circumstances, except as to the presence of hemialbumin. In this case the chemical reactions were the same as in the first case, urine otherwise normal, with no sediment for microscopic examination. He was soon relieved by regulation of diet and mild diuretics. Daily examinations of the urine were made for a week, but no hemialbumin was found except in the first instance.

In searching the literature at my command, I find in several independent authorities allusion to this condition having been observed by Bence Jones and Kuhne, and as no other observations are recorded, I judge its occurrence must be very rare. I do not remember having seen any allusion thereto in a general reading of current medical

literature for five years. Whether its occurrence is of any significance or not, is as yet undecided, but judging from my having seen it twice in at most only a few hundred examinations of urine, it must be more common than supposed, in many instances being pronounced albumin from careless testing, which may also explain how it is sometimes so easy to cure "Bright's disease." I know that it is the practice of many good physicians to apply only the nitric-acid test for albumin, and where they get the dense white precipitate they consider it entirely unnecessary to proceed further, when possibly the heat test would reveal quite another state of affairs It was to call attention to this practical point that prompted me to report the above observations.

Progress of Medical Science.

Treatment of Vesicular Keratitis.— Drs. Wecker and Landolt think that it is not sufficient in vesicular keratitis, or herpes of the cornea, to evacuate the contents of the vesicles by puncture, inasmuch as the liquid is soon reproduced. The parietes of the vesicles should be removed with forceps, or the lesion should be well scraped with a cataract-knife, and the eye covered with a compress. If the patient will not submit to this operation, they recommend introducing into the eye a pinch of calomel or other powder capable of destroying the thin walls of the vesicles by friction. In addition, instillations of eserine or of pilocarpine are useful.—*Therapeutic Gazette.*

Syphilis of the Kidney Surgically Considered.— Dr. Israel (*Le Mercredi Médical*, February 24, 1892) made a communication to the Open Reunion of the Berlin Surgeons, in which he says that syphilitic affections of the kidney have not till now found a place in works on renal surgery, because, on the one hand it would seem exceptional that they could call for operative interference, and on the other, their confusion with true surgical diseases of the kidney seems impossible. Up to the present time we know two forms of renal syphilis—interstitial nephritis and gummata. The latter in the published cases reached such a volume that there was no occasion for a differential diagnosis between them and renal tumors. In the first case which the author relates, to show that philitic kidney may at times have a surgical interest, a woman, aged twenty-three, who had probably contracted syphilis four years previously, had been well until three weeks before seen, when frequent micturition, increased thirst, abdominal cramps, and continual rachialgia were noted, and a tumor began to show itself in the right hypochondrium. The right kidney was found decidedly increased in size on palpation, was of hard consistence, uneven surface, and painless on pressure. The augmentation of volume, the hardness of the organ, and the loss of flesh on the part of the patient, all favored a diagnosis of malignant neoplasm. Nevertheless the presence in the urine of epithelium of the pelvis, and globules of pus, caused hesitancy, although these elements are found in malignant tumors. This diagnosis was further opposed by the frequency of micturition, thirst, and increased volume of urine with feeble density, traces of albumin, and the presence of hyaline casts, symptoms rather favoring a diagnosis of renal sclerosis. Syphilis was thought of, and iodide of potassium ordered, under which the tumor diminished in an appreciable manner, while the patient gained ten pounds and a half in about two months. About this time epithelial masses, in form of a precipitate of fine white particles, began to be constantly present in the urine, and as their diagnostic importance or cause could not be determined, as neither the author nor others who saw them had ever seen a similar condition, after three months of observation an exploratory incision was determined upon to clear up the nature of the process. The capsule was found much thickened, œdematous, and solidly adherent to the kidney. The upper half of the kidney was of normal volume, and regular surface and consistence. On the contrary, the inferior part was hypertrophied, enlarged, hard, and covered with decided elevations. Nephrectomy was therefore decided upon. Examination of the organ showed the condition to be one of interstitial nephritis, with hyperplastic peri- and para-nephritis, the lesions so joined together as to give the impression of a tumor. None of the alterations explained the peculiar elements found in the urine, which continued to be present afterward, although the opposite kidney was not increased in size. The author thinks there was no doubt of the case being one of syphilitic nephritis, as the lesions were characteristic, but in his experience the unilateral nature of the affection is without parallel.

In a second surgical case we are told of a condition of atrophy of the kidney consecutive to syphilitic gummata. In May, 1889, a young man began to suffer from spontaneous pains in the region of the lower part of the left thoracic wall. Five months later the character of the pains changed, and now sensations of intense burning came on in attacks lasting two or three minutes from ten to seventeen times daily. An abscess, thought to be splenic, was opened at the tenth rib, and a white, puriform, lumpy substance evacuated. The pains decreased but did not disappear. In October, 1890, the patient came to the author. The urine contained pus and albumin, but no tubercle bacilli. A distinct, resisting, diffuse fulness was to be felt in the region of the kidneys. A paranephritis, with probable renal destruction, was thought probable, and nephrectomy was decided upon. Anatomically this was found to be the case, but etiologically the renal disease was due to syphilis. The atrophied kidney was completely filled with gummous products shut in by a fatty capsule, thickened and transformed into a veritable sac. The patient made a good recovery. Such an advanced stage of degeneration is rare in syphilis, and till now has not received surgical treatment. These observations have a clinical, anatomical, and therapeutic interest, and teach that syphilis should be included in the surgical affections of the kidney.

Nitroglycerine Subcutaneously in Poisoning by Illuminating Gas.— Dr. Hoffmann (*Allgemeine Med. Centr. Ztg.*, 1891) reports a case of poisoning by illuminating gas where the patient breathed the air of a small room into which gas had escaped from an open burner from 11 P.M. till 9 A.M. Four grammes of ether were injected under the skin without result. One milligramme ($\frac{1}{60}$ gr.) of nitroglycerine was injected into the præcordial region. One-half a minute later the pulse became stronger and the respiration deeper. From then on the pulse was regular and strong. One hour later the patient could swallow several spoonfuls of coffee. That afternoon there was headache, dyspnœa, and malaise, but by the next day entire recovery had taken place.

Treatment of Diabetic Coma.—Dr. Reynolds (*Medical Chronicle*, 1891, p. 338) having met with about twenty fatal cases of diabetic coma, all fatal except two, recommends the plan of treatment employed in these last. After giving an aperient he made his patient with impending coma (drowsiness, pain in epigastrium, labored breathing) drink about a gallon of water during the night, and take every hour sixty grains of citrate of potash. The dose of the latter drug was diminished, but the treatment appears to have been kept up for three days, by which time all the alarming symptoms had disappeared. In the next case there was an acetone odor, with slight breathlessness and drowsiness; he ordered castor-oil, large quantities of fluid, and thirty to sixty grains of citrate of potash every hour. During the next thirty-six hours he took one and a half gallon of fluid, with the result that the symptoms disappeared.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE ETIOLOGY AND PREVENTION OF YELLOW FEVER.

AT a time when epidemics of destructive diseases are specially feared, when there are reports from various parts of the world of the extension of cholera, the spread of typhus, and the invasion of new districts by the yellow fever scourge, the profession in this country, and in fact everywhere, is interested in any new facts which may throw light into dark places, or explain the present scientific status of things, known or unknown. Within the past few years the bacteriologists have given very satisfactory evidence as to the important part which pathogenic micro-organisms bear to the etiology of a large number of diseases; and while inferentially much more may be expected in the same line of inquiry, we are occasionally brought to a standstill by a mere report of progress with a simple encouragement to continue the work. A forcible reminder of the latter condition is given in the admirably exhaustive report of Major George M. Sternberg, U. S. A., on the etiology and prevention of yellow fever, just published by the United States Marine Hospital Service, by direction of the Secretary of the Treasury. The investigations which have resulted in the report in question were undertaken by command of the Government, and were made principally in Cuba and in such portions of the United States as have been infected with yellow fever since 1888.

In view of the well-earned reputation of Dr. Sternberg for scientific accuracy in bacteriological studies, it is unnecessary to say that there is scarcely anywhere to be found a gentleman who could be better fitted, by experience and training, for the work assigned him. It therefore becomes doubly interesting to note his conclusions, and utilize such data as are offered to the practical test of prospective experience.

Notwithstanding the laudable ambition to discover a specific infectious germ for yellow fever, it certainly requires on his part no small amount of courage to declare that the results of his work in that direction have been negative. With a true scientific spirit of accuracy, he declares tersely, and very much to the point, that the specific infectious agent in yellow fever has not been demonstrated; and this, too, after the most careful, conscientious, and thoroughly impartial critical study of the claims of other investigators, not to mention his own frustrated hopes in the same direction. Numerous micro-organisms were found in the blood of yellow-fever cadavers, but none that was positively distinctive. Blood, urine, and crushed liver were not pathogenic when obtained from recent autopsies and injected hypodermatically in moderate amount into rabbits and guinea-pigs. The opposite was the case, however, with liver tissue preserved in an antiseptic wrapping at a temperature of 20° to 30° C., for forty-eight hours. This pathogenic power appeared to be due to the micro-organisms undergoing some change during that time, or to the toxic products developed as a result of their growth.

While it seems reasonable to suppose that a specific germ may exist, there are so many modifying circumstances to be taken into account, so many complex processes to be controlled, that at present the usual methods of research are inadequate to isolate it. That this difficulty is fully appreciated by our distinguished countryman is shown by his highly instructive comment, that "many facts relating to the origin and extension of yellow fever epidemics give support to the inference that the specific infectious agent is present in the dejecta of those suffering from the disease, and that accumulations of fecal matter and of other organic material of animal origin, furnish a suitable nidus for the development of the 'germ' when climatic conditions are favorable for its growth. It may be that such a nidus is essential, and that the culture media usually employed by bacteriologists do not afford a suitable soil for this particular microbe. It is also possible that its development depends upon the presence of other micro-organisms found in fecal matter, which give rise to chemical products required for the development of this one."

The practical bearing of this observation is evidenced by the special manner in which yellow fever propagates itself, in that it will only grow in a special nidus, that it is always imported, that its area of infection in seaports is quite limited, that it extends slowly, is always carried by infected persons or clothing, and affects only such unacclimated persons as come within the area of infection

Granting what appears to be perfectly reasonable, that the dejecta of yellow-fever patients are infectious, it is natural to agree with Dr. Sternberg in recommending that such material should never be thrown into privy-vaults or buried without previous thorough disinfection, and all soiled clothing, bedding, and the like should be similarly treated by the most approved methods of fumigation. This rule, thoroughly enforced, together with an efficient quarantine and proper attention to the sanitary police of our exposed seaport cities, will, Dr. Sternberg believes, effectually prevent this pestilential disease from obtaining a foothold within the limits of the United States.

Although the points thus far noticed appear of most importance, considering the main purpose of the work, there are others, bearing upon the natural history of the disease, which are incidentally instructive as corroborating statistically what is already pretty well known. These may be alluded to incidentally, in order that a suitable practical turn may be given to the painstaking and elaborate investigations of the talented author.

At the risk of repeating part of what has already been said, but as a necessary introduction to our concluding comments, we quote his admirable definition of yellow fever, as reproduced from his article in Wood's "Refer-

ence Handbook of the Medical Sciences:" "A specific infectious disease, contracted by exposure in infected localities; characterized by a single febrile paroxysm of short duration (two to five days), by the presence of albumin in the urine, an icteric color of the skin, and a tendency to passive hemorrhages from mucous surfaces—especially from the stomach—producing 'black vomit.'"

No new facts have been introduced bearing upon the well-recognized methods of invasion, the influence of climate, the significance of pathological lesions upon mortality, nor the average immunity from second attacks in acclimated individuals. It is safe to say, in passing, that the theory of personal contagion is quite effectually overthrown, and the weight of evidence is entirely on the side of such as believe in the direct influence of infected localities. As regards treatment of the disease, the practitioner will be glad to learn that it is still considered a self-limited disease, and that little else is to be done save on the expectant plan. Considering the limitation of the disease to certain infected localities and the well-known means of preventing its extension, there is little to be apprehended from any wide spread epidemic in this country. The history of previous epidemics has proved this in their short-lived duration. The very fact that the infectious area is limited, affords the best possible chances of escape for unacclimated persons, provided the infectious materials are not carried with them. But quarantine of itself amounts to nothing, unless combined with the most complete sanitary regulations; nor does frost always kill the infectious principle.

These are some of the many points in the natural history of the disease that may tend to increase our confidence in prophylactic measures, and give us hope of limiting its spread when it has already gained a foothold. To be forewarned is to be forearmed. We can thus calmly await events and hope for success accordingly.

THE HIGHER EDUCATION OF WOMEN IN GERMANY.

The question of the co-education of the sexes has reached the stage of inquiry in Germany. A short time ago the Government addressed a note to all of the universities, calling for an expression of opinion from each as to the expediency of admitting women to attendance upon the lecture courses. Several of the universities, among the most important of which may be mentioned that of Gottingen, have declared themselves as unqualifiedly in favor of admitting both men and women on an equal footing, while others think that the time is not yet ripe for such a radical change, and some have expressed themselves as adverse to the innovation.

Professer Hermann Grimm, of the University of Berlin, has recently published a communication on the subject in the *National Zeitung*, in which he takes the ground of a moderate conservative. He seems to be unwilling to admit women to his own lectures from purely personal motives, because he is accustomed to speak to young men only, and cannot bring himself to address a mixed audience, but he has apparently no objection to the principle of co education. He confesses that he has been converted from the theory that women are intellectually inferior to men, or that the so-called higher education will unsex them and render them incapable of the normal functions of wifehood and motherhood. He admits that many women have to devote a large portion of their time and energy to business details, while still remaining devoted wives and mothers, and he confesses that there is no *a priori* reason why the same time and energy should not be devoted to intellectual pursuits without detracting from the purely feminine duties. He apparently, however, ignores the fact that there are more women than men in the civilized world, and that some must, therefore, of necessity forego the normal relationship of wife and mother, and that it is the right of each individual woman to elect whether she shall devote her life to science exclusively, or shall take upon herself the arduous task of bearing and forming a new generation. Liberty is the watchword of our day and generation, and while we think that the highest office of woman is that of child-bearing and child-training, we cannot deny to her the following of business or scientific pursuits if she so will.

Germany is one of the last countries in Europe to hold out against this view, but the ground has evidently been broken over there. "Men have no right," Professor Grimm says, "to forbid women to avail themselves of the advantages offered by public institutions of learning, in order to obtain the knowledge of which they feel the need, for there exists to-day a general disinclination to be unjust." This declaration, coming from a conservative in conservative Germany, is of the highest significance, and foreshadows the final breaking down of all barriers in that country to the higher education of women. They may not be admitted to the same classes with men, and there is no reason why they should, either in Germany or elsewhere. Let them be only given equal opportunities with men to acquire knowledge, and that is all they can with justice demand. And that is what they are evidently on the eve of acquiring in Germany at the present day.

THE CHOLERA.

The latest cable reports at the time of writing are to the effect that the cholera continues to advance in Western Russia, the occurrence of a number of cases in Warsaw and other parts of Poland being now admitted by the authorities. In several cities all mail matter from the infected districts is disinfected before it is allowed to be distributed. In Tashkend, one of the chief cities of Turkestan, very serious riots have occurred in consequence of the stringent sanitary measures taken by the authorities to prevent the spread of the disease. The mob destroyed the residence of the Russian Governor and killed several of the officials. The military were called out, and after trying vainly to disperse the rioters with bayonets, fired into them, killing about one hundred and wounding many more.

That the plague is more serious than has been admitted by the authorities, is indicated by the report of a newspaper correspondent, who states that during July over fifty thousand persons died of cholera in Russian Caucasus alone. The Government has established an orphanage in Astrakhan for children whose parents have been carried off by the disease.

The question whether there is cholera in Paris or not seems still undecided, with the probabilities now in favor

of its being true cholera, preceded by some municipal lying in order to prevent a "scare." Now that the disease is under control the authorities appear willing to admit its real nature. Such kind of deception, if deception it was, is as short-sighted and foolish as it is scandalous.

News of the Week.

The Late Dr. Charles D. Scudder.—The following resolutions were passed at a meeting of the Medical Board of the French Hospital:

Whereas, It has pleased Almighty God to suddenly remove from among us Dr. Charles D. Scudder, for a number of years a most valued member of the Medical Board of the French Hospital in the City of New York, we, his former colleagues in the Hospital, do hereby

Resolve, That by his death the Hospital has suffered a most grievous loss and will severely feel the lack of his wise counsel, his loving and faithful work, and his enthusiastic co-operation in all that tended toward improvement. And be it further

Resolved, That we, his associates in the Hospital, do each and all feel that we are bereft of a personal friend, whose consummate acquirements, whose loftiness of manhood, and whose deep religious faith commanded our admiration and our love. And it is further

Resolved, That in this, their irreparable loss, our heartfelt sympathy is extended to all who were near and dear to him.

T. Gaillard Thomas, Edward G. Janeway,
C. C. Seguin, James E. Kelly,
Julio J. Henna, W. Duncan McKim.
Egbert H. Grandin,
G. G. Van Schaick, *Hon Sec.*

American Social Science Association.—The General Meeting of this Association will be held in the Town Hall in Saratoga, beginning Monday, August 29, and closing Friday, September 2, 1892. The opening address will be given by the President, H. L. Wayland, D.D., of Philadelphia, Monday evening, August 29th, at 8 P.M. On the same evening, at 9 P.M., Rev. J. M. Buckley, D.D., will address the Association. The departments will hold sessions as follows:

Tuesday, August 30th. Department of Education.—Remarks by the Chairman, Merrill Edwards Gates, LL.D., President of Amherst College. Report of the Secretary, Dr. Louise Fiske Bryson, of New York, on "Education as a Therapeutic Measure." A paper by Miss C. M. Hewins, of the Hartford Library, Conn., on "Public Libraries as a Factor in Education." A paper on the "Educational Value of Modern Economics," by Starr Hoyt Nichols, Esq., of New York. A paper on "Art Education in American Life," by Myra B. Martin, of New York. An address on "The Training of the Mentally Defective in Childhood," by Dr. Isaac N. Kerlin, of Elwyn, Pa.; followed by a report of the General Secretary on "Training Insane Women to Domestic Industry."

Wednesday, August 31st. Department of Health.—Remarks by the Chairman of the Department, Frederick Peterson, M.D., of New York. A report by the Secretary of the Department, W. D. Granger, M.D., on the "Work of the Health Department since its Organization." A paper by Matthew D. Field, M.D., of New York, on "The Examination and Commitment of the Public Insane in New York City." A paper by Ralph L. Parsons, M.D., of Sing Sing, N. Y., on "Voluntary Commitment of the Insane to Asylums." A paper by Henry Ling Taylor, M.D., of New York, on "American Children Hygienically Considered," followed by debate. An address by W. W. Keen, M.D., of Philadelphia, on "The Modern Surgery of the Brain." A paper by Frederick Peterson, M.D., of New York, on "The Old and the New Phrenology."

Thursday, September 1st. Department of Jurisprudence.—Remarks by the Chairman of the Department, Professor Francis Wayland, of New Haven, Conn. Subject, "Has the State abdicated?" A paper on "The Great Coal Combination," by C. La Rue Munson, Esq., of Williamsport, Pa. A paper on "Municipal Government," by Albert Shaw, Ph.D., of New York. A paper on "County Jails," by Edward B. Merrill, Esq., of New York. A paper on "Crime and Penalty in the United States," by Hon. Andrew Dickson White, of Ithaca, N. Y.

Friday, September 2d. Department of Social Economy.—Address by the Chairman of the Department, F. B. Sanborn, of Concord. Report by the Secretary of the Department, on "The Sweating System," by Joseph Lee, Esq., of Brookline, Mass. A paper on "The Sweating System in Massachusetts," by H. G. Wadlin, Esq., Labor Commissioner of Massachusetts. A paper on "Conditions observed by a Dispensary Physician in New York in regard to the Sweating System," by Annie S. Daniel, M.D., of New York. A paper on "The Actual State of Tenements in Boston where Work is Carried on," by William F. Hicks, Esq., of the Boston Board of Health. Papers on "The Sweating System in Europe," by Rev. John Graham Brooks, of Brockton, Mass., and on "Remedial Measures Proposed in England by the House of Lords Commission, with their Results," by Mr. David F. Schloss. An address on "Architecture in Relation to Life," by Mr. Barr Ferree, of New York.

The headquarters of the Association will be at the United States Hotel, as usual, where members and guests of the Association will be received at the reduced rate of $3 a day. F. B. Sanborn, *General Secretary.*

Venesection in Pneumonia.—Dr. C. C. P. Clark, of Oswego, writes that in his article on the "Lost Art of Venesection," in the Medical Record of July 9th, he made the statement that he could not remember having lost a patient after bleeding. What he intended to say was that he could not remember having lost a patient from pneumonia after bleeding him.

Programme of the Sixth Annual Meeting of the American Orthopedic Association.—The meetings will be held at the New York Academy of Medicine, September 20, 21, and 22, 1892. The Association will be called to order daily at 9 A.M. There will be an afternoon session at 2 P.M. On Tuesday evening, at eight o'clock, Dr. Lewis A. Sayre will receive the members and guests of the Association at his house, No. 285 Fifth Avenue. At eight o'clock on Wednesday evening the Annual Dinner will be held in the banquet-room of the Academy of Medicine.

First Day, Tuesday.—The following papers will be read: "The President's Address," by Dr. Benjamin Lee, of Philadelphia; "Report of a Case of Spontaneous Dislocation of the Hip-joint," by Dr. B. E. McKenzie, of Toronto; "Adduction Following Fracture of the Neck of the Thigh-bone," by Dr. H. Hodgen, of St. Louis; "Osteitis Deformans, with a Report of Two Cases," by Dr. Henry Ling Taylor, of New York; "Lateral Dislocation at the Knee-joint Due to Local Disease, or Paralysis, with Especial Reference to Treatment," by Dr. T. Halsted Myers, of New York; "Plaster-of-Paris Orthopedics," by Dr. A. J. Steele, of St. Louis; "The Orthopedic Treatment of Infantile Spinal Paralysis," by Dr. John Ridlon, of Chicago; "A Report of Two Years' Operative Work in the Hospital of the Ruptured and Crippled," by Dr. V. P. Gibney, of New York; "Lateral Curvature," by Dr. E. H. Bradford, of Boston; "The Classification of Hip Disease," by Dr. R. W. Lovett, of Boston; "A Study of Some of the Problems in the Mechanical Treatment of Hip-joint Disease," by Dr. Newton M. Shaffer, of New York; "Experiments Demonstrating the Etiology of the Various Deformities in Hip-joint Disease," by Dr. A. M. Phelps, of New York; "Some Remarks on the Etiology of Club-foot," by Dr. Samuel Ketch, of New York. Discussion to be opened by Dr. J. K. Young, of Philadelphia. "At What Age Shall the First Treatment of Congenital Club-foot be Instituted?" by Dr. Augustus Wilson, of Philadelphia. Discussion to be opened by Dr. C. C. Foster, of Cambridge.

Second Day, Wednesday.—The following papers will be discussed together: "The Non operative Treatment of Congenital Club-foot," by Dr. A. B. Judson, of New York; "The Non-operative Treatment of Club foot in Young Infants," by Dr. R. W. Lovett, of Boston; "Manual Replacement in the Treatment of Club-foot," by Dr. Ap Morgan Vance, of Louisville; "The Treatment of Club-foot by Continuous Leverage," by Dr. Henry Ling Taylor, of New York; "The Place of Traction in the Treatment of Club-foot," by Dr. Newton M. Shaffer, of New York; "The Use of the Wrench in the Treatment of Club-foot," by Mr. Robert Jones, of Liverpool. Discussion to be opened by Dr. A. M. Phelps, of New York, and Dr. Roswell Park, of Buffalo. The following papers will be discussed together: "The Operative Treatment of Club-foot," by Dr. DeForest Willard, of Philadelphia; "Analysis of Bone Operations in Club-foot, especially Enucleation of the Astragalus," by Dr. V. P. Gibney, of New York; "Treatment of Resistant Club-foot," by Dr. E. H. Bradford, of Boston. Discussion to be opened by Dr. L. A. Sayre and Dr. J. B. Bryant, of New York.

Third Day, Thursday.—The following papers will be read: "An Easy Way to Hold the Operated-on Club-foot in the Corrected Position while the Plaster-of-Paris Splint Sets," by Dr. H. M. Sherman, of San Francisco; "Means for the Prevention of Relapse in the Treatment of Club-foot," by Dr. B. E. McKenzie, of Toronto; "Necessity for Mechanical Treatment after Operations for Club-foot," by Dr. W. R. Townsend, of New York; "A Case of Club foot with Rare Complications," by Dr. A. J. Steele, of St. Louis. Papers (titles not announced) will also be read by Drs. T. Halsted Myers, of New York; R. H. Sayre, of New York; H. L. Burrell, of Boston; and J. C. Schapps, of Brooklyn.

The following are the officers of the Association: *President*, Benjamin Lee, M.D.; *Vice Presidents*, R. H. Sayre, M.D., H. L. Taylor, M.D.; *Corresponding Secretary*, Royal Whitman, M.D.; *Secretary and Treasurer*, John Ridlon, M.D., 34 Washington Street, Chicago.

Treatment of Rhus Poisoning.—Dr. R. L. Patterson, of Bridgeville, Pa., writes that glyco-phenique, applied according to the following formula, gives greater relief than anything else in cases of poisoning by rhus toxicodendron. It will, he says, relieve the severest case within two hours, and cure it in half the time required under any other method.

℞. Glyco-phenique (Déclat),
Olive oil.....āā equal parts

To be kept in contact with the affected parts by means of absorbent cotton.

If the eyes are inflamed and swollen, the following collyrium should be used:

℞. Acidi borici ..... gr. xij.
Aq. camph.,
Aq. destillata .....āā ℥ ij.
Sig.: Drop into the eyes frequently.

Dr. James M. Griffin, of Brooklyn, died on June 14th. He was born at Plattsville, N. Y., in 1842, and was graduated from the Albany Medical College in 1869. At the time of his death he was President of the Central Throat Hospital and Polyclinic Dispensary, and at a special meeting of the medical board of this institution, held June 15, 1892, the following resolutions were adopted:

Resolved, That in the death of Dr. James M. Griffin this Hospital and Dispensary has lost an able and prominent member, the community a highly esteemed and gentlemanly physician;

Resolved, That during his professional career he distinguished himself by a blameless life, an honorable character, genial sympathy, reverence for truth, and respect;

Resolved, That to his bereaved widow and sorrowing son we tender our heartfelt sympathy and consolation, assuring them that we shall ever cherish in our hearts pleasant memories of his life.

Henry A. Riley, A.B., LL.B., a frequent contributor to medico-legal literature, died of heart-disease, in New York, on June 9th.

Visceral Phlebotomy.—Dr. George Harley has again been treating cases of hepatic disease by means of bold punctures. In the first case the liver was punctured to a depth of eight inches in a patient dying from the combined effects of a greatly enlarged, hard, and inflamed liver, ascites, and marked anasarca. Recovery followed, with no return of the disease. In the second case, the liver, enlarged and inflamed, and the seat of strumous abscesses, was likewise treated. Copious hemorrhage took place through the bile-duct into the intestine. The liver became smaller, and convalescence ensued. Pulmonary phlebotomy is the most difficult form of visceral phlebotomy, the constant movement of the lungs making it far from an easy matter to close the wound; but it has been done, so we are informed, with great benefit to the patient. Dr. Harley holds that visceral phlebotomy should be practised on every accessibly situated internal organ in preference to leeching and cupping.

Unchaste Man.—The Professor of Latin in Columbia College says that there is no single word in any language to express the male equivalent of virgin, that is, a chaste man. Still there have been races, such as the ancient Germans, where chastity in males was a highly esteemed virtue; and it is one also which was diligently taught and pretty well practised by the Christian men who founded this Republic.

The Medical Magazine is the title of a new monthly published in London, by Southwood, Smith & Co.

Dr. Da Costa has resigned the chair of Clinical Medicine in Jefferson College.

Salophen.—Dr. W. H. Flint finds that salophen (acetyl-para-amydo-salol) acts very well in acute rheumatism, given in doses of fifteen grains every three hours.

The Work of State Medical Examining Boards in the United States.—According to Dr. P. H. Millard (*Medical News*), the total number of persons examined by these boards in Alabama, North Dakota, North Carolina, Virginia, and Minnesota has been 1,950. The total percentage licensed was 75.2 per cent. Of 183 graduates of colleges requiring three courses of instruction for the degree of M.D., 179 passed examinations; 4 were rejected, making the percentage passed 97.2. Of 435 graduates of colleges that formerly issued degrees after attendance upon two courses of lectures, 343 passed examinations; 92 were rejected. The percentage passed was 78.8.

Dr. T. W. Hime has successfully transformed small-pox into cow-pox, by inoculating a calf with variolous lymph.—*British Medical Journal.*

An Alarm-bottle for Poisons.—A Canadian named Trottier has invented a simple and ingenious device to be attached to all bottles containing poisons. It consists of a mechanism fastened to the bottom of the bottle, and so arranged that every time the bottle is lifted or moved it rings a little bell. With a death's-head for the eye, and a kind of death-rattle for the ear, it seems as if accidents ought to be entirely avoided.

The Summer Work of the Board of Health.—The physicians comprising the "summer corps" of the Board of Health inspected last week 3,788 tenement-houses, containing 34,958 families. They prescribed for 3,246 sick persons who were too poor to pay for medical treatment. Of these, 2,062 were suffering from diarrhœal diseases, and 48 from contagious diseases.

Dr. H. C. Coe, of this city, recently performed laparotomy in a case of abdominal pregnancy at term, and cæsarean section in another case of dystocia. Both cases had a successful termination.

Cincinnati has now a public medical library connected with the Cincinnati Hospital. It is supported by fees from students. The library already has 7,000 volumes.

Fuchsin is found by Dr. Geo. T. Elliott to be a very useful remedy in Paget's disease.

A Dog Hospital and Dog Clinic are to be established in connection with the University of Pennsylvania. We learn that "on the first floor the commodious clinic-room will open into the largest apartment, that for the non-contagious cases. At either side of the latter will be the mange and the distemper wards, both being separated from the clinic-room by heavy brick partitions, the communications with all other parts of the building from these wards being effected only by going outside and around."

The Death-rate of the Hot Week.—The number of deaths recorded during the last week in July, in New York City, was 1,434. Estimating the population at 1,832,473, the death-rate was 40.83 against 30.80 for the previous week. The average for the five years since 1886, for the corresponding period, was 28.33. There were 773 deaths of children under five years, against 647 during the previous week. The deaths resulting from contagious diseases were: Typhoid, 17; scarlet fever, 8; measles, 22; diphtheria, 27; small-pox, 1. The principal causes of the other deaths were: Sunstroke, 90, as against 2 for the week previous; whooping-cough, 11; malarial fever, 7; diarrhœa, 391—355 being children under five years; heart disease, 58; croup, 10; bronchitis, 25; pneumonia, 68; phthisis, 95; Bright's disease, 53; violence, 47; and miscellaneous, 592. There were 290 deaths in public institutions, and 985 among the tenements.

Questions Given at the Examination for the Paris Doctorate.—The following, set at the recent examination for the M.D. Paris, will give some idea of what will be required for a Paris degree.

Anatomy (Oral).—What is the prostato-peritoneal aponeurosis? How is it constituted? What is the nerve of the third pair? What are the relations of the popliteal artery? What position does the femoral vein occupy in relation to the artery and the nerve? What is the course of the internal saphena vein? How does it act in the triangle of Scarpa? What is the nerve of the fifth pair? What are the relations between the arteries and the veins of the bend of the elbow?

Medicine.—Give the indications and counter-indications of digitalis? Describe the symptoms of measles? Describe the symptoms of internal strangulation? What do you know about purulent pleurisies? What is gonorrhœal rheumatism? What do you know of cirrhosis of the liver? What are the signs and causes of hydro-pneumothorax? What is phlegmasia dolens? What are the signs of aortic insufficiency? What is Cheyne-Stokes respiration? What are the signs of phthisis? What are the complications of diabetes?—*Medical Press.*

A New Method of Skin-Grafting.—This is thus described by its originator, Ereberto Aievoli: An animal with well-developed testes is castrated. The organs are washed in the usual salt solution and then cut in thin sections, which are placed in a salt solution. The granulation surface, after being cleaned, is covered with small pieces of the testicle, these being placed one or two centimetres apart. Antiseptic dressing. Good results are claimed which Aievoli thinks are due to the marked biological activity of the cells implanted. In experimentation he used sections of the salivary and mammary glands and the testes.

American Pediatric Society.—The next annual meeting of this society will be held at some summer resort near New York during the latter part of May, 1893. The President of the Society is Dr. A. D. Blackader, of Montreal, Canada; Secretary, Dr. Samuel S. Adams, 1632 K Street, N. W., Washington, D.C.

Society Reports.

AMERICAN OTOLOGICAL SOCIETY.

Twenty-fifth Annual Meeting, held at the Fort Griswold House, New London, Conn., July 19, 1892.

GORHAM BACON, M.D., OF NEW YORK, PRESIDENT, IN THE CHAIR.

THE Society was called to order by the President.

Mastoid Disease.—DR. OREN D. POMEROY, of New York, reported seven cases of mastoid disease exhibiting somewhat extensive carious processes.

CASE I.—J. W——, aged nineteen. Two years before admission he had a post-aural abscess, which was incised, and a few months later the mastoid was freely opened and carious bone removed. On entering the hospital the mastoid opening was nearly closed and the middle ear was suppurating. There was a swelling below the auricle, red, painful, and preventing free movement of the jaw; pressure on this part evacuated pus from the tympanum. Two days later the patient was etherized and the granulations in the tympanum were removed by the curette. An extension of the mastoid incision opened into a large cavity that seemed to include the mastoid and tympanum. A large quantity of pus was evacuated by syringing. Temperature in the evening, 103.6° F. The next day the temperature was 99° F. Within two days an abscess in front of the velum on the left side was opened. This showed no apparent communication with the ear cavity. After two weeks the discharge became much less, and the carious cavity showed signs of filling up with healthy tissue. The abscess in the throat was probably due to the ear trouble.

CASE II.—M. G——, aged thirty-four. Two months before admission he had acute suppurative otitis in the left ear, with mastoid periostitis, for which Wilde's incision was done. There was an opening in the mastoid three-fourths of an inch deep, into which the little finger could be thrust, at the bottom of which pulsation was apparently felt. The meatus was filled with dried epithelium and pus. There was elevation of temperature from rheumatism in the left hip-joint. The mastoid cavity was cleaned out and packed with iodoform gauze, and large doses of iodide of potassium were given. A few days subsequently some easily detachable bits of carious bone were removed with curette and gouge. The temperature at this time was 103° F., but this was reduced by phenacetine. Stimulants were freely used, and the patient became much better and was able to walk about the wards. A month later pieces of carious bone were removed by the bone curette and gouge. Other portions were washed out by the syringe. Considerable granulation material and a cheesy substance were also removed. The part was dressed with iodoform gauze after irrigation with bichloride solution. The patient was discharged two months after admission, much improved.

CASE III.—T. S——, aged sixteen. Came into the hospital with an acute suppurative otitis media of both ears. Six days later a Wilde's incision was done on the left mastoid. The discharge continued from each ear when he left the hospital, some weeks later It was seven months after this that he came under the author's care for the first time. Over the left mastoid was a small aperture leading into a large carious cavity, which included the mastoid and tympanum. This opening was enlarged by a stout knife, so that the finger could be introduced into the mastoid cavity. Dead bone and granulations were found. On syringing, a soft, flocculent material, resembling broken-down brain-substance, was removed in large quantities. The opening in the mastoid was more than an inch in depth. Antiseptic irrigation was practised, and cotton smeared with vaseline, 5,000 parts, and bichloride, 1 part, was applied to the wound. After three weeks granulations and small bits of bone were removed by the curette. An abscess subsequently appeared above the meatus and communicating with it. This was opened and found not to communicate with dead bone. It was treated antiseptically and by a compress, and gradually the mastoid closed and the discharge from the ear nearly ceased.

The right ear in the meantime had filled with granulations, which were removed with the curette. Pressure on the mastoid caused pus to exude from the meatus, and a Wilde's incision was therefore made in the expectation of finding an opening in the mastoid, but none was found. The wound was kept open by a cotton tent. A month later there was an opening into the mastoid, and two or three considerable masses of dead bone were drawn out with the artery forceps. This left an enormous cavity which seemed to include the tympanum. Polypi were also removed. There was much hemorrhage. Antiseptic irrigation was practised, and vaseline and bichloride on cotton was applied. Since this time granulations and bits of dead bone have been removed. The external wound has now closed with considerable sinking, and the ear has almost ceased discharging.

CASE IV.—A. W——, aged two, had suppurative otitis of the left ear dating back five months. The author first saw her November, 1890, when the tympanum was full of polypi. There was a large carious opening in the mastoid, which was filled with granulation. Small bits of carious bone and a cheesy-looking detritus were removed, and in a few days the patient was much improved. After another month more granulations were removed and some dead bone. Four months later the mastoid opening was closed with considerable sinking. The discharge from the ear diminished after each operation.

CASE V.—J. S——, aged four months, had a swelling behind the left ear of four days' duration, with a discharge from the ear for one month. A Wilde's incision was made and an opening into the antrum found. After a few days a probe was passed in one and one-half inch in the direction of the tympanum, touching bone. This opening was enlarged by the drill and kept clear by syringing with an antiseptic solution. The patient was brought very irregularly, and the treatment was not carried out intelligently, and the child died two months later with brain symptoms.

CASE VI.—A. P——, Italian, aged forty-two, had an otitis media suppurating since three months, with a swelling over the mastoid. The latter was at once incised, and a handle of a scalpel could be thrust through an opening in the cells which seemed to include the tympanum in its area Antiseptic irrigation was practised for some weeks. Granulations were removed from the mastoid. Later there was considerable œdematous swelling about the mastoid, which subsided in a few days, and the temperature became normal. He had several attacks of severe headache, which were relieved by quinine and bromides. More granulations and dead bone were removed, and the next day the patient was better. Soon after this he became offended and made a serious attack on the nurse. He was then sent to the New York Insane Asylum to be examined as to his mental condition, but was soon discharged. He has recently been heard from, and the ear symptoms are not urgent.

CASE VII.—A. P——, aged forty-two, had a suppurative otitis media on the left side, of one week's duration, and a painful swelling over the mastoid since two weeks. Pus was evacuated by a Wilde's incision. A large opening was found in the mastoid extending inward one and one-quarter inch from the surface. After four weeks of treatment by irrigation the external wound was nearly closed. but a sequestrum of bone was found. There was also apparently some cellulitis of the adjoining soft parts. The opening was enlarged and more dead bone removed. After this there was decided improvement, and the patient disappeared from observation.

In these cases no effort was made to remove all the dead bone, but whatever was loose or readily detachable

was taken away. Adequate antiseptic drainage was carefully looked after, and the vital energies were kept up by stimulants, tonics, food, and proper nursing.

It was strange that only one of these cases resulted fatally, when it is known that any considerable quantity of dead bone in the vicinity of the brain may induce fatal cerebral disease. The author did not think it proper to attempt the removal of dead bone where the meninges are in danger of being encroached upon.

Craniometric Studies in Relation to Aural Anatomy.—Dr. B. Alexander Randall, of Philadelphia, read a paper with this title. He referred to the numerous careful studies of the temporal bone made with special relation to operation, and the conflicting results of Kormer and Schultzke as to a relation between the cranial index, and the dangerous position of the lateral sinus and the middle cerebral fossa. Recognizing from the first the need of more extensive examinations, he had been accumulating data bearing on the matter, and offered now a preliminary report, principally to secure criticism of his methods. Only 122 skulls, 73 broad-headed, 33 long-headed, and 16 medium in index, were used in the tabulation, and the only clear showing was that maximum or minimum dimensions might be found on either side and in any form of skull. The belief in the presence of greater danger on the right side and in the brachycephalic skull received slight confirmation, the cerebral fossa being actually more often lower on the left. But no deductions, he held, should be attempted from so small a series of examinations, since any indications are probably worthless which are derived from less than one thousand skull measurements.

Otitis Media and Optic Neuritis.—Dr. Charles J. Kipp, of Newark, N. J., reported a case of purulent inflammation of the middle ear, with double optic neuritis and other symptoms of intracranial lesion, but without tenderness of the mastoid process, in which the opening of the mastoid cells was followed by rapid subsidence of the optic neuritis and cure of the disease. Particular attention was called to the absence of tenderness over the mastoid even on percussion, and to the desirability of repeated ophthalmoscopic examination in prolonged middle-ear disease.

Mastoid Cases.—Dr. C. J. Blake, of Boston, reported a number of cases. Of twenty-five patients with mastoid congestion and inflammation seen in the first six months of this year, three were treated by continuous cold coil with excellent effect. The remaining twenty-two cases came to operation at various stages of the mastoid disease, and with various complications. Two cases died, one on the ninth day, complicated with pneumonia, and the other on the tenth day, with meningitis from extension of the suppurative process from the middle ear through the tegmen tympani.

Basilar Meningitis Occurring in a Case of Chronic Purulent Otitis Media.—Dr. H. Knapp, of New York, reported the case of a healthy-looking man, aged thirty-five years. About middle of April, 1892, he began to complain of headache apparently due to neuralgia. This, however, was succeeded by slight elevation of temperature, but no change in the pulse and no tenderness over the mastoid. The pupils were normal. By the end of April there was drowsiness with nervous movements of the hands. Meningitis dependent upon aural disease was diagnosed by the attending physician. The patient was seen by two prominent neurologists who diagnosed cranial abscess from ear disease. The speaker saw the case May 3d. There had been discharge from the right ear for three years, which had ceased during the previous week. Temperature, 102.2° F. Headache, stupor, incoherent, difficult speech, and delirium were present. The pupils and fundus were normal, and there was no painful spot on percussion of skull. The diagnosis was concurred in and operation urged. This was done the next day. The mastoid was found sclerosed throughout. The superficial portion of the bone presented some evidences of disease, but the deeper the bone was exposed, the healthier it appeared. The operation was then suspended. The patient continued to sink, and died a few days later. The autopsy showed marked evidences of basilar meningitis. The lungs were then examined, and distinct evidences of pulmonary tuberculosis found. The patient had presented no symptoms suggesting examination of the lungs, and all the indications pointed to cranial suppuration following aural disease.

Pyæmia Following Acute Suppurative Otitis.—Dr. J. B. Emerson, of New York, reported the case of a woman, twenty-four years of age, who was admitted to hospital with a free purulent discharge from the ear, but no special tenderness over mastoid, no redness, and no œdema. The temperature for the first six days varied between 101° and 102° F., at the end of which time there was a chill and the evening temperature rose to 105° F., pulse, 125. There was no pain, except in the back of the neck, very little tenderness over the mastoid and left side of head, but no redness or œdema over mastoid. The ear was discharging profusely. The patient's condition continued about the same for five days, when the evening temperature reached 105.4° F. There was still no redness, œdema, or tenderness over the mastoid, and the discharge from the ear was free. The general condition of the patient continued to improve, but an abscess developed over the right sterno-clavicular articulation. Later a second collection of pus formed over the sternum. This was opened, but soon after a swelling formed over the left side of the neck. A few days later an incision was made into the swelling, and pus was found at a depth of one and a half inch. No direct communication with the mastoid could be found. Following this the patient slowly and steadily improved, and was discharged after a course of treatment extending over a period of four months.

Mastoid Operation.—Dr. T. Y. Sutphen, of Newark, N. J., said that on March 17, 1892, he was called to see Miss B. K——, aged sixteen. There had been chronic otitis media of the left ear for several years. For a few days there had been intense pain and a temperature of 105° F., but no sign of mastoid trouble other than the pain. The next day there were general septicæmic symptoms with chills, alterations in temperature, and vomiting. A hard swelling beneath the sterno-cleido-mastoid muscle was discovered. May 22d, the mastoid was opened, but there was only a drop or two of purulent fluid. The condition of the patient continued very unfavorable until May 30th, when pus began to flow freely from the mastoid wound. The temperature then fell to 99° F., and the patient made a rapid recovery.

Mastoid Disease Following an Operation for the Removal of Adenoid Vegetations.—Dr. Gorham Bacon, of New York, reported the case of a patient, aged thirty, who said that a physician had a week before removed adenoid vegetation from the naso-pharynx, by means of the index-finger, and completed the operation the following day with forceps. She had a subacute pharyngitis at the time. Two days after the operation she had severe pain in the right ear, and this was followed by a mucopurulent discharge on the day of admission to hospital. She was immediately put to bed, the Leiter coil applied, and the ear douched frequently with a warm boracic acid solution. Under this treatment the mastoid symptoms soon disappeared. A week later a periosteal abscess on the right side was opened and about a drachm of pus escaped. An incision in a similar swelling on the left side gave a negative result. The patient made a good recovery, and at no time did the temperature go above 100° F. The case was reported because the writer had not seen any mention made of acute otitis media and mastoid disease following the operation for removal of adenoid vegetations. It is possible, however, that the carbolic acid solution which the patient was advised to syringe through the anterior nares, by the physician, before she came under the author's care, might have had something to do with the etiology of the disease.

Antiseptic Solutions in Purulent Middle-ear Disease.—Dr. Samuel Theobald, of Baltimore, read a paper on "The Value of Weak Solutions of Bichloride of Mercury in the Treatment of Otitis Media Suppurativa." He stated that boracic acid in fifteen-grain solution was still, as it has been for some years, his first choice in the treatment of all cases of recent, and in most cases of chronic, otorrhœa. Boracic acid, however, occasionally fails to accomplish what is expected of it, and in exceptional instances aggravates rather than lessens the inflammation. It was in these cases that the speaker had recently used, with very good effect, weak solutions (usually 1 to 8,000) of mercuric bichloride. The ear is simply syringed with the solution. Unlike some who have recommended the use of this agent in otorrhœa, he had not usually found it necessary to repeat the syringing more than once in twenty-four hours. Notes of several cases were given in which a prompt arrest of suppuration and closure of the perforation in the tympanic membrane followed the employment of the bichloride solution after boracic acid had been used without effect.

Wound of the Lateral Sinus.—Dr. D. B. St. John Roosa, of New York, reported a case in which a wound of the lateral sinus, occurring in the course of a mastoid operation, was followed by septicæmia, with subsequent recovery. The speaker remarked that there had been a number of cases reported in which the sinus had been wounded during operation, but that, so far as he was aware, death had in no instance resulted from this accident. The patient, a young lady aged twenty-three, had for years suffered from recurrent attacks of suppuration of the left ear. It was thought that the mastoid was probably in a carious condition, and it was decided to open it, the drill being used. As soon as the bone was perforated the drill dropped into a large cavity, and the removal of the instrument was followed by a gush of venous blood which could not be checked by ordinary means. It was believed that the lateral sinus had been perforated. The wound was plugged with iodoform gauze. Four days later, when the wound was dressed, there was no trouble from bleeding. Symptoms of septicæmia then set in, but after two months of expectant treatment the patient made a complete recovery.

Remarkable Improvement in Hearing Following Removal of the Stapes.—Dr. F. L. Jack, of Boston, said that he had recently operated on a case of chronic suppurative otitis in a girl aged twelve. After removing portions of the membrana tympani, malleus, and incus, examination showed the head of the stapes to be carious, and it was decided to remove the bone. Previous to operation there was very little hearing in the affected ear. On the following morning the hearing was much better, and this fact suggested the possibility of good results from the removal of the stapes. Previous to this the speaker had operated on two cases of chronic non-suppurative middle ear inflammation, by removal of the drum membrane, malleus, and incus. The results, as regards hearing, were not satisfactory. Removal of the stapes is much better in its results, and in the author's experience there had been no inflammatory reaction whatever. The method of operating was then described. Sixteen cases were reported in detail, giving the results of tests for hearing before and after operation. Two of the cases were presented to the Society for examination. The effect of the operation on the hearing, as tested by the watch, in some was not marked in either way, in others there seemed to be a slight loss, and in others again a slight gain. But the result which gave to the operation its importance was the marked improvement in hearing the human voice which was thereby accomplished. If persons who had heretofore heard only with difficulty, could be made to hear with ease, the operation by which this was accomplished ought certainly to be worthy of consideration. As to the reason why this effect is produced by the operation, the speaker had no theory to offer other than the simple supposition that it was by the removal of a mechanical obstruction to the sound-waves.

Middle ear Operations.—Dr. C. J. Blake, of Boston, presented a communication with this title. The history of the surgical treatment of middle ear disease was first briefly referred to, and it was shown that it had been definitely progressive.

In chronic non-suppurative diseases of the middle ear, where surgical interference is determined upon on account of obstruction to sound transmission through ossicular change, the removal of the incus or malleus may be considered merely incidental, since the stapes is the important element. Various procedures for the mobilization of the stapes have been proposed and practised, but the removal of the stapes has until recently been left out of serious consideration. The justifiability of this procedure is to be premised from the fact that the stapes is especially liable to be tied down by the reduplications found in about eighty per cent. of normal ears.

The writer's experience in this matter consisted in a series of experiments in various cases, beginning with the observations having reference to the diagnostic value of high musical notes (1873), extending up to the present time, and including operations in the following sequence: 1. Excision of the posterior segment of the membrana tympani, allowing the sound-waves to fall directly upon the stapes. 2. Formation of a flap from the posterior segment of the membrana tympani, and attachment of it to the descending process of the incus, for the purpose of transmitting the vibrations of the membrane directly to that bone. 3. Division of the incudo-stapedal articulation through a small triangular opening in the membrana tympani. 4. Attachment of a flap from the posterior segment of the membrana tympani to the head of the stapes, the incus being either wanting or removed. 5. Division of the incudo-stapedal articulation in case of existing perforation of the membrana tympani, division of the stapedius muscle and of numerous folds of adhesions. 6. Removal of the stapes itself.

Mobilization of the stapes, including stapedenotomy and division of adhesion, is of value in cases resulting from suppurative disease; is of comparatively little value in the chronic non-suppurative disease of the middle ear. For the improvement of hearing and the relief of tinnitus in the severe cases of chronic non-suppurative diseases of the middle ear, the disarticulation and removal of the stapes is likely to be of more lasting benefit than removal of the incus, or of the malleus and incus. The speaker would not hesitate, in the light of present experience, to recommend stapedectomy in cases where he had previously proposed dividing the articulation of the incus and stapes and tenotomy of the stapedius muscle.

The operation varies in difficulty in individual cases, but is more easily done in chronic non-suppurative cases than in those in which the fixation of the stapes is an incident of a long continued suppurative process.

A Case of Operation for Catarrhal Deafness.—Dr. B. Alexander Randall, of Philadelphia, reported a case of excision of the drum membrane and malleus for catarrhal deafness, followed by suppuration, mastoid empyema, and burrowing abscess of the neck. No reaction followed till the fifth day, when high fever began with severe pain and profuse muco-purulent discharge. This gradually lessened under treatment, but in about four weeks pain and swelling of the occiput, of the mastoid, and at the angle of the jaw, gave evidence of the mastoid empyema breaking into the digastric fossa. The usual incision was made over the mastoid, pus was evacuated from the digastric fossa; the neck abscess beyond the bone sinus was scraped, and the outer surface of the mastoid was trephined in the usual manner, the antrum being freely opened. On irrigation, the fluid passed into the canal at first, then found its way into the pharynx by some lower opening, the temperature fluctuated greatly during the following fortnight, and there was oculo-motor paresis, diplopia, and some mental aberration suggestive

of intracranial abscess. A good recovery was ultimately made, but at no time was there any improvement of the hearing to compensate in the least for the suffering. While the severe symptoms might possibly be ascribed to an attack of influenza, it is much more probable that the incus, which had been displaced upward, clogged the exit of the antrum and induced the empyema. This would furnish a strong indication for the removal of the incus in any such operation, which even then may be followed by negative or unfortunate results.

Exostosis of the External Auditory Meatus.—Dr. D. B. St. John Roosa, of New York, reported the case of a woman aged forty-six years, who for twenty-one years had had impairment of hearing and tinnitus in the right ear, and pain in both ears at times. Examination showed the external auditory canal to be almost completely closed by a bony growth at the junction of the osseous and cartilaginous portion. She could hear the watch only on contact. The mass sprang from the posterior wall, and left a small space between it and the anterior wall. On operation it proved to be a very thin plate of bone, and was removed by the chisel without difficulty. The patient did well, and the hearing distance for the watch went up from contact to $\frac{1}{40}$.

Dr. C. J. Blake, of Boston, stated that in two different families he had seen multiple exostoses occurring in three generations, grandfather, father, and son.

Dr R. A. Reeve, of Toronto, reported a case of exostosis of the meatus in which the special indication for operation was that the growth had become so large as to press upon the tissues of the opposite wall of the canal, causing intense suffering.

Dr. E. E. Holt, of Portland, Me., exhibited an ear bitten off by a horse, and made a brief report of the case.

Dr. C. J. Blake, of Boston, exhibited the plans for the new Aural building of the Massachusetts Charitable Eye and Ear Infirmary.

Election of Officers.—*President*, Dr. Gorham Bacon, of New York; *Vice President*, Dr. Huntington Richards, of Des Moines, Ia.; *Secretary and Treasurer*, Dr. J. B. Vermyne, of New Bedford, Mass.; *Member of Executive Committee of Congress of American Physicians and Surgeons*, Dr. William H. Carmalt, of New Haven, alternate, Dr. F. B. Loring, of Washington.

BRITISH MEDICAL ASSOCIATION.

Sixtieth Annual Meeting, held at Nottingham, July 26, 27, 28, and 29, 1892.

Abstracts of Addresses Delivered at the General Sessions.

(Condensed from advance sheets of the *British Medical Journal*.)

The President's Address.—Mr. Joseph White took for the subject of his presidential address a review of the development of the work of the British Medical Association and of British Medicine and Surgery since the last Nottingham meeting. He began with a description of Nottingham as a very clean town, for a manufacturing one, in some parts rather picturesque, and not unhealthy. The death-rate of the town had fallen steadily from 1850, when it was 28 per 1,000, to the present, when it was but 17.9, being the third lowest of the twenty-seven largest towns in England.

The last time the British Medical Association met at Nottingham was in 1857, and the progress since made by it was very striking. The number of members at that time was 2,065, while now it was more than 14,000. It had then no sections, its branches were confined within the limits of the southern half of Great Britain, and one small room sufficed for the accommodation of those taking part in the meeting.

The speaker then dwelt upon the advances in surgery and in medicine which had been made during the past thirty-five years, not only in Great Britain but in other countries as well, and concluded by expressing the belief that the British Medical Association was specially fitted—by reason of its organization, with branches extending over nearly every part of the world, with almost every climate as its field of work, and with thousands of members all engaged in the same pursuits, all animated by the same aims and desires for the same kind of knowledge—for developing in the highest possible way the fruits of that combined work on which he believed the future of medicine to depend in great measure.

Surgery.—Dr William H. Hingston, of Montreal, delivered the address, taking for his title, "Synthesis in Surgery." The speaker devoted a large part of his discourse to the climate and prevalent diseases of Canada, and to a description of domestic surgery as practised by the Indians of the Dominion, from whom he thought more civilized people might learn not a little. "If in the depths of the forest an Indian breaks his leg or arm, splints of softest material are at once improvised. Straight branches are cut, of uniform length and thickness. These are lined with down-like moss, or scrapings or shavings of wood, or with fine twigs interlarded with leaves, if in summer; or with the curled up leaves of the evergreen cedar or hemlock, if in winter; and the whole is surrounded with withes of willow or osier, or young birch. Sometimes it is the soft but sufficiently unyielding bark of the poplar or the bass-wood. Sometimes, when near the marshy margin of our lakes or rivers, the wounded limb is afforded support with wild hay or reeds of uniform length and thickness. To carry a patient to his wigwam or to an encampment, a stretcher is quickly made of four young saplings, interwoven at their upper ends, and on this elastic, springy couch the injured man is borne away by his companions. When there are but two persons, and an accident of this nature happens to one of them, two young trees of birch or beech, or hickory are used Their tops are allowed to remain to aid in diminishing the jolting caused by the inequalities of the ground. A couple of cross bars preserve the saplings in position, and the bark of the elm or birch, cut into broad bands and joined to either side, forms an even bed. In this way an injured man is brought by his companion to a settlement, and often it has been found, on arrival, that the fractured bones are firmly united, and the limb is whole again."

The surgeon of practical mind learns, like the aborigines, to make use of whatever is nearest to his hand when scientifically constructed instruments are wanting, and often practice gives him such skill in the use of the former that he retains them in preference to any of special and complicated construction. Some years ago, Dr. Hingston said, he was present at a meeting of a medical society in one of the Western United States. A gentleman from one of the large centres had exhibited an instrument for removing foreign bodies from the nose. He extolled its advantages, was applauded, and everything promised well. A smile, however, came across the faces of many present when a small, nervous man advanced somewhat briskly to the platform. His style was sharp, his language terse, and personal pronouns were used most sparingly. He commenced somewhat in this fashion: "Mr. President—Much obliged to the gentleman from the city. Long distance for him to come to show us this instrument; long distance for us out here to send for one when wanted. Now, when called to see a child with a cherry or any other kind of stone, or a pea, or a bean, or a bead, or a button in his nose, not going to send all the way to the city for this instrument, and for the professor to come with it—for that's what it means. Can do without both. Wherever there's a boy with something in his nose that has no business to be there, there is sure to be a woman in the neighborhood, and wherever there's a woman there's sure to be a hairpin. Now, with the boy and his nose and something in it and the woman and her hairpin, and a live doctor and his jack-knife, nothing

more is wanted. Now, with the jack-knife, half open, bend the double end, coax this bent end along the roof of the nose, raise the wrist a little, and withdraw with the bent end well down, and if one of the child's toys is there it's safe to come."

Returning from this digression the speaker said he was far from wishing to imply that the practice of surgery in Canada was in general primitive. On the contrary, in the larger Canadian cities surgery in every department is pretty much what it is in the more favored cities of Europe, in the way both of refined diagnosis and of dexterous and courageous operation. There are, indeed, surgical pioneers there, for "the tongue and lower jaw were together first removed in Canada; the innominate and the gluteal arteries were first ligatured in Canada; and the credit of the first nephrectomy, which writers give so generally to Germany, belongs to Canada and to Montreal."

The orator then took up the main part of his address, that to which he had given the name synthesis in surgery. He referred to the subdivision of the surgical art into so many specialties, and the danger resulting therefrom in the narrowing of the specialist's horizon, and in his tendency to take a part for the whole and to give to that part an undue width. The art of surgery is becoming more and more divided into an ever increasing number of special branches, each branch having its respective province, which is sometimes kept too sharply defined by an exaggerated interpretation of its importance. Yet, he maintained, each must ever remain cognate to, and in close relationship with, every other department of the art, for there are no limits or boundaries to their various departments, and a seemingly intimate acquaintance with one and a total nescience of others are crass ignorance of all. He did not wish to be understood as desiring to interfere in any way with the pursuit of any particular course, however narrow it might appear to some, however vast to others. His desire was simply to *extend* the horizon of each, not to narrow it, and to show that all branches of our art are cognate to each other.

In concluding, the speaker referred to the necessity to a candidate for admission to the study of surgery of a liberal education. He would not do away with the classics in the preliminary studies, but would demand an education which was more than classical. Physicians and surgeons had always been among the most learned and the best informed. But at the present day the difficulty of preserving that distinction is greater than formerly. Education, at one time confined to the few, is now possessed by the many, and while the separation of professions and division of labor tend to the perfection of art, says Dr. Copleston, yet, he adds, "although the art itself is advanced by this concentration of mind in its service, the individual who is confined to it goes back."

Medicine.—The General Address in Medicine was delivered by DR. JAMES CUMING, of Belfast, who began by a reference to the relative decrease of learning in the medical profession. Bacon had said that there was greater honor to divinity and more profit to law, but the palm of learning must be awarded to physicians. To-day, the speaker said, while we have lost in respect of learning, we cannot be said to have gained much upon our sister professions in respect of honor or of profit. Yet at no period of the world's history has medicine been more assiduously cultivated, never have its ranks been filled by so many able and energetic workers, and at no period have its claims to public usefulness been capable of being so triumphantly vindicated. He believed that the remedy for this state of affairs was to be found in less devotion on the part of the medical student to the study of chemistry, botany, and natural philosophy. These sciences have themselves grown to such proportions that no one man, even though giving his whole time to it, can hope to master any one of them. "It may be urged that the study of the ancillary sciences, as they have sometimes been called, is of high importance to the discipline of the intellect, and tends to develop the habit and the power of careful and accurate observation; and this may be admitted in the fullest and most ungrudging manner. But the powers of the average human intellect are far from illimitable, the capacity of attention is bounded, and the sum of mental energy requires to be carefully husbanded, to be directed in the right channels, and not to be allowed or compelled to dissipate itself in useless effort." The speaker believed that there were other subjects more closely identified with medical science which would afford abundant scope for mental discipline, while at the same time serving as a good foundation upon which to erect the superstructure of practical medical knowledge.

The recent advances in bacteriology were then dwelt upon, the orator taking the view that Metschnikoff's theory should be accepted. He believed that certain cells possess the power of attacking and destroying infective microbes within the body, although he did not deny that there might be much of weight in Buchner's views regarding the importance of antibiotic fluids in the blood.

Dr. Cuming next referred to the increase in nervous diseases and insanity, an increase which statistics showed to be very real, notwithstanding that it had been denied by some. He thought that this pointed to the necessity of a study of psychology, without an acquaintance with the methods and problems of which it is impossible to observe and to describe adequately the phenomena of morbid mental states. It was gratifying, therefore, to find how great an amount of research was now being conducted on the subject of experimental psychology. In this direction much of the best work had been done in the Leipsic Psychological Laboratory, by and under the direction of Wundt, but kindred investigations are being made by various observers elsewhere. The researches on the intensity and the time relations of sensation and of motor response to stimuli are of the highest interest. They have enabled us to ascertain the time occupied by mental acts, by the reproduction of impressions, by acts of association, and by logical judgments. The amount and quality of work done in this direction justify the hope that psychology, as a natural science, will take its place beside physiology, and that the physical basis of mental activity will be more and more understood and elucidated.

Returning again, in closing, to the problem of the preliminary education of the medical student, he said that it was to be regretted that the study of the old humanities must be curtailed, and must even in some measure disappear from medical education. "Greek seems doomed past recall, and it will, perhaps, be possible to say, at some future day of the medical profession, as Petrarch said of Italy in the fourteenth century, that it did not contain more than ten persons who could appreciate Homer. And yet, in putting aside Greek, medical men will miss some of the finest products of the human intellect, moulded in the most perfect form. . . .

"Latin will make a harder fight to maintain its place, and will probably succeed in retaining it. If it should fail, it will be impossible not to feel a profound sense of compassion for the physicians of the future, if they are never to be admitted to the simple feasts at the Sabine farm, at which educated men have been charmed guests for so many generations; or if they are never to feel the beauty and finish of the hexameters of Virgil. . . .

"The pursuit of literature is everywhere being regarded as less necessary, and from a utilitarian point of view it is impossible to give more than a passing regret to those branches of learning which have so long been regarded as the stamp and evidence of culture. What with unconscious irony are called the paying subjects are brought more and more prominently forward in general education, and those studies which bear on professional training will ultimately prevail to the comparative exclusion of all others."

Bacteriology.—Dr. G. Sims Woodhead, in his address, took up first the subject of "Antitoxins and their Influence in the Cure of Disease," a subject on which so much confusion exists in the minds of many. It has been found, in the case of hog-cholera for example, that the serum from an animal vaccinated against this disease allows of a most luxuriant growth of the hog-cholera organism, and that it certainly exerts no antitoxin action when injected into an animal suffering from the disease. On the other hand, when the serum from a vaccinated animal is injected from time to time into the circulation of a non-vaccinated animal, which is some time afterward inoculated with hog-cholera virus, it is found that the animal now enjoys a very marked insusceptibility to the disease, while the serum of animals not previously rendered immune to the disease, when injected into non-vaccinated animals, exerts no protective effect, the disease being developed just as in animals previously unexperimented upon.

"If, now, we consider that this serum from vaccinated animals serves as an excellent cultivating medium for the growth of micro-organism of hog-cholera, as, too, we find that when sterilized products of a culture of hog-cholera bacillus or the blood taken from an immune animal do not interfere with the special poison when introduced simultaneously into the circulation, it must be concluded that such sterile product does not act directly either on the bacillus or on the poison produced by the bacillus; on the other hand, we find that this same substance introduced into the circulation of the animal undoubtedly exerts a certain protective influence, so that we are compelled to the conclusion that this serum—or rather some body present in it—must act directly on the protoplasm of the cells of the body. Metschnikoff argues that it must act as a specific stimulant, for it is generally accepted that there is a specific protection for most specific diseases. It must be held, too, that a modification of all the cells of the body with which this poison can come in contact may take place, for all these cells are equally liable to be attacked by organisms."

Should it be definitely proved, however, that antitoxins are formed as the result of the action of certain bacteria on the tissues and fluids of the body, this part could prove of little practical value in the treatment of disease, for very large quantities of the blood or serum from immunized animals have to be used in order to obtain the results desired, and it is difficult to imagine how it would be possible to obtain sufficient of the antitoxin from living animals, however vaccinated; while the risks to patients would be so great that such treatment would be unjustifiable.

This is, of course, different from what the speaker called the process of acclimatization. According to this acclimatization theory various cells and tissues of the body become so accustomed to the presence of certain poisons when administered in small but gradually increasing quantities at definite intervals, that when large doses are actually formed within the body, the tissue-cells are still able to react, to carry on their phagocytic functions, and thus to treat pathogenic organisms as mere saprophytes.

The importance of bacteriological chemistry was insisted upon, and the nature of the work thus far done was exemplified in the case of diphtheria, a disease in which, the speaker held, owing to the bacteriologico-chemical methods which have been imported into its study, we not only recognize with a moderate degree of certainty that we have to do with a specific organism, but also have learned how it acts.

A New Cause of Measles.—An English health officer recently received the following note from one of the residents of his district: "Dear sir, I beg to tell you that my child aged eight months is suffering of measles as required by Act of Parliament."

MEDICAL SOCIETY OF NEW JERSEY.

One Hundred and Twenty-sixth Annual Meeting, held at Atlantic City, June 28 and 29, 1892.

Elias J. Marsh, M.D., of Paterson, President.

Reports of Committees.—The Society was welcomed to the City of Sanitation by the Mayor, Dr. Willard Wright, and on the part of the local profession by Dr. Boardman Reed, after which reports of various committees were read, including that of the Standing Committee.

Medical History of New Jersey for 1891.—Dr. D. C. English, Chairman of this committee, stated, in his summary of the reports received from physicians in different counties of the State, that la grippe seemed to have become a regular visitor. It had been attended by a greater fatality, especially among the aged, in some of the counties than in previous years, and in some had often been complicated by pneumonia. Dr. Stickler had reported one case of la grippe in which the pharynx was covered with a fibrinous membrane. Diphtheria had been less prevalent. Rubeola and rotheln were said to have prevailed together, the one not giving immunity against the other, thus proving their separate existence. There had been eighty cases of variola in Newark, several in Passaic. Dr. William Pierson, of Orange, had reported a case of carcinoma of the kidney weighing forty-three pounds.

Among the questions which the committee had sent out was one asking, "What have you found the best antiseptic in derangement of the stomach, diarrhœa, and typhoid?" The answers had been multitudinous, but the remedies oftenest mentioned were, in order of frequency, salol, bismuth, carbolic acid and iodine, sulpho-carbolates, creosote, naphthalin, listerine, calomel, etc. To the question, "What is your most usual treatment of peritonitis?" most replied, "Opium as recommended by Alonzo Clark;" some, "salines;" others, "mixed treatment." About twenty cases of sudden death during pneumonia had been reported. In reply to the question, "What has been the value of hyoscin and its compounds in insomnia?" contradictory reports had been received. The drug seemed most useful in sleeplessness attended with choreic movements or excitement. The committee queried, for the possible benefit of the younger men, whether new drugs and new combinations suggested by enterprising manufacturers were not too often tried to the discredit of older and more reliable remedies.

The President's Annual Address.—Dr. Marsh chose for the subject of his annual address, "Longevity: More particularly the Natural Duration of Life in Man." The subject had been written upon to some extent in ancient and mediæval times, and had recently received not a little attention from scientists. The natural duration of life, excluding the question of external influences, had not varied essentially from the time of reliable history. Cicero evidently considered seventy years an old age. Unless in lower forms of organization, as in cells which propagated by division, the duration of life was limited, and within certain, comparatively speaking, narrow bounds. Buffon believed that the natural life of man and animals was some multiple of the period at which they attained their growth, and the same view had been accepted by Flourens and others, but the period of growth and the multiple given by different writers had not been uniform. Proximately, however, physiology gave man a life of one hundred years. Individual instances in which this period had been considerably exceeded were not unknown, although in many traditional instances of the kind there was room for doubt. The cases of Parr, Desmond, and Jenkins, if entirely reliable, would show the possibility of human life being extended beyond a century and a quarter, and indeed beyond one hundred and fifty years. In army records only about two persons of a million men attained a height of seven feet, yet now and then one reached the extraordinary height of eight feet, so that by analogy it was not improbable that here and there a per-

son reached the great age of one hundred and twenty-five years or more. A physician, member of the Cumberland County Medical Society for seventy-four years, still living, was born in 1792. The English and American censuses of recent years had given a number of cases of centenarians.

By collective investigation on the part of English physicians, undertaken at the suggestion of Professor Humphrey, a list of nearly nine hundred cases of persons of great age, seventy-one above one hundred years, had been published, in many of which the age could be vouched for. In these instances questions had been answered with regard to habits of life, weight, etc.

The following facts were emphasized by the essayist's studies: That a prime requisite of long life was to start with a good inheritance, a body, so to say, which was wound up and sent into the world to run a long period; a body well developed, the organs proportionate; avoidance of excess of food and drink, and of general overstrain, or over-strain of special organs. While the duration of life among physicians had not been of the greatest as compared with other pursuits, yet Dr. Marsh saw no reason why each member of the medical profession might not so live as to attain to the full number of years allotted to man, if his inheritance and early training permitted, and in no other pursuit could one feel more assured of the good will and respect of the community in his last days.

The Society's Library.—The report of Dr. H. Genet Taylor showed a steady growth of the Society's newly begun collection of medical works at Trenton. The committee, which had also had under consideration the question of starting a medical museum, thought it best that no action be taken.

The Doctors and the National Guard.—Dr. Storck, of Camden, offered resolutions, including a vote of thanks, to the Legislature and the Governor, for an act which went to place the Medical Corps of the State militia more nearly on a footing with that of the United States Army. To some this seemed to savor of politics, but a majority voted for the resolutions.

The Gross Monument Fund.—Dr. B. A. Watson made an earnest appeal in behalf of the Samuel Gross Monument Fund, and at his request a committee was appointed representing each county.

The True Pathology of Sudden Death in Acute Pneumonia and the Best Means of Averting It.—Dr. C. F. J. Lehlbach, of Newark, opened the discussion on this subject, which was presented at the last meeting, by reading a paper. Cases with previous disease, such as nephritis and heart lesions, were excluded from the discussion. While citing no new cases with post mortem examination, the author arrived at the conclusion that the most common cause of sudden death in acute pneumonia (usually not occurring until commencement of convalescence) was embolism of the heart and pulmonary artery. Pneumonia seemed to favor thrombosis and embolism. It became obvious, therefore, that whatever preventive means were taken they would have to be general and precautionary. Exertion should be avoided for sometime after convalescence. Ammonia was not only one of the best cardiac stimulants, but it also tended to prevent blood coagulation and the formation of emboli. He recommended the salicylate of ammonia because of its additional efficacy in rheumatic complications. The discussion was participated in by Drs T. R. Chambers, Currier, Rogers, Evans, Condit, Ridge, Neer, and Armstrong, whose remarks were directed chiefly to preventing sudden death.

Dr. Chambers cautioned against the cumulative action of digitalin, others recommended oxygen inhalation, strophanthus, ammonia, etc.

Report of Committee on Dairy Cows.—Dr. H. L. Coit, of Newark, read the report of the committee, which was continued from last year. The importance of the subject was made evident by the statement that over two billion dollars were invested in the dairy business in the United States; four million farmers owned fifteen million cows; over six billion and a half gallons of milk were produced. The reader here showed how rapidly milk deteriorated, the influence thereon of improper food given the cows, and made mention of adulterations. Milk's greatest enemy was bacteria. It appeared that New Jersey's cows were being better cared for, but the greatest evil in the feeding line was the use of brewery waste, which rendered the milk watery, was wanting in certain of the nutrient elements, and likely to ferment early. Other points brought out referred to tubercular cows, cleanliness, etc.

The report was adopted, together with a resolution urging more energetic action on the part of the State Board of Health and Board of Agriculture.

Ethics in New Jersey.—The Committee on Honorary Membership had had before it three names, all of New York doctors, and although it recommended their election, the question was raised whether they belonged to the old or the new code party; or, rather, whether they consulted with irregulars, and as the committee could not answer that question, it was requested to report next year.

After hearing reports from delegates from other States, and from the American Medical Association, by Dr. Johnson, the Third Vice-President, Dr. O. H. Sproul, read his address on

Obstetrical Statistics. — Dr. Sproul had commenced early to keep statistics of his cases, which now included 1,500 consecutive cases of labor at or near term. Vertex presentations, 1,435; breech, 58; shoulder, 7; placenta prævia, 11; puerperal eclampsia, 6; puerperal fever, 2; still-births, 82; forceps, 138; version, 15; craniotomy, 0; rupture of uterus, 1; deaths, 7; excess of males, 199; excess of night deliveries, 132; hour-glass contraction, 2; rupture of perineum, 18.

The author would now use the forceps oftener to shorten labor and relieve suffering. He performed immediate perineorrhaphy. There were a few cases of deformity.

Compression Corset in Cake Breast.—Dr. Chambers presented a corset with rubber cloth front for exercising compression in mammary inflammation which had not proceeded to the stage of abscess. He also presented a rubber bag to draw over the scrotum in acute epididymitis or orchitis, and said it was far superior to poultices, etc., in relieving the pain and swelling.

Dr. Mordecai Price showed a uterus containing a fœtus well advanced.

Election of Officers.—*President*, George Y. Welch, of Passaic; *First Vice-President*, John G. Ryerson; *Second Vice-President*, O. H. Sproul; *Third Vice-President*, William Elmer; *Corresponding Secretary*, E. L. B. Godfrey; *Recording Secretary*, William Pierson; *Treasurer*, Archibald Mercer.

To meet at Spring Lake, fourth Tuesday in June, 1893.

The Treatment of the Status Epilepticus.—Dr. Kernig (*St. Petersburger Med. Wochenschrift*) publishes an account of a method of treating the so-called "status epilepticus," and gives the following particulars of a case treated by this method: A girl in the Obuchoff Hospital in St. Petersburg, after suffering a whole night from almost continuous epileptic convulsions, next morning was unconscious, but without any œdema of the lungs, and with a fairly good pulse. On the convulsions being renewed, a hypodermic injection of 0.02 gramme of hydrochlorate of pilocarpine was given, and 1.5 gramme of camphor in an emulsion. Profuse perspiration followed, and the convulsions immediately ceased, but for an hour pulmonary œdema and collapse seemed imminent. These symptoms, however, passed off, and were followed by sound sleep and a good pulse. The patient was made to lie on her side, to prevent annoyance from the excessive secretion of saliva.

GEORGIA STATE MEDICAL ASSOCIATION.

Forty-third Annual Meeting, held at Columbus, Ga., April 20, 21, and 22, 1892.

DR. G. W. MULLIGAN, OF WASHINGTON, PRESIDENT, IN THE CHAIR.

Ovarian Cyst.—DR. C. M. SPENCE, of Waresboro, gave the history of an interesting ovarian cyst. The patient gave a history of a twin birth five years before the doctor's visit. This was followed in a year by triplets, and then the tumor began to grow in the right ovary. Dr. Spence found the lower extremities filled with water, caused by pressure. The measure of the abdomen was 6½ feet, and from the pubes to the ensiform the distance was 3 feet and 9 inches. A trocar drew seventy quarts of thick straw-colored fluid. Two weeks later twenty-eight quarts of similar fluid was withdrawn, together with a substance that looked like human brains. Two weeks later thirty ounces of fluid was obtained, and ten days later patient had cholera morbus and died.

The Influence of Civilization and Social Life upon Women, as Viewed from a Medical Standpoint.—DR. D. C. HURT, of Columbus, read a paper on this subject. He compared the savage and civilized women of America, claiming the latter's comparatively weak constitution due to their methods of life and dressing. He called on the profession to correct these evils.

The Relation between Skin Diseases and the General Health.—DR. M. B. HUTCHINS, of Atlanta, read a paper with this title. He treated of eczema chiefly, and reached the conclusions that skin diseases are not all blood diseases, and that of the etiology of skin diseases little is as yet known.

The Treatment of Abortion, and Some of the Complications Incident Thereto, was the title of a paper read by DR. W. A. CROW, of Atlanta. He claimed there was a marked tendency to infection in abortion; that consequently all sources of infection should be removed if possible; that all the fœtal membranes and placental tissue should be removed; patient should be kept under observation for two months, to complete involution of the uterus and to build up general health; that the patient should avoid becoming pregnant within following six months.

The Treatment of Pneumonia, with Report of Cases.—DR. H. PERDUE, of Barnesville, read the paper. Fifteen cases of lobar pneumonia were treated without a death by using peroxide of hydrogen. Throughout the stages of congestion and consolidation he gives phenacetine in five-grain doses in connection with whiskey or milk-punch, every four hours, unless the temperature should get below 103° F. Good nursing is an important factor in the management of pneumonia patients. A nutritious liquid diet, such as sweet milk, beef-tea, and palatable broths should be given. In convalescence, stimulating expectorants and tonics are indicated.

"What is Gynecology?" was the title of the paper read by DR. R. R. KIME, of Atlanta. He traced its history to the present time, and showed the prominent part the South had taken in its remarkable progress.

Remittent Fever.—DR. A. C. BLAIN, of Macon, read a paper on this subject. His treatment is with quinine, giving it in morning doses. He thinks a mercurial cathartic, followed by quinine and a mineral acid, will abort attacks, if given early.

The Surgical Treatment of Puerperal Peritonitis.—DR. W. E. S. DAVIS, of Rome, read the paper. The disease results from infection during the puerperal state. When quarts and gallons of pus are removed from the general cavity and recovery follows, he thinks the pus has usually resulted from a local collection which has ruptured into the general cavity, and the operation has been done before sufficient time has elapsed for this amount of pus to result from the septic inflammatory process in the general cavity. This form of disease, localized puerperal peritonitis with pus formation, is amenable to surgical treatment.

"How Shall We Manage the Uterus after Abortion?" was the title of the paper read by DR. K. P. MOORE, of Macon. He emphasized the necessity of cleaning out the cavity of the uterus in cases of abortion, and by so doing it would be the means of preventing some of the troubles incident to an abortion.

Cough: Some of its Causes and Treatment, was the title of a paper read by DR. C. D. ROY, of Atlanta. In regard to treatment, he dwelt on the necessity of removing all sources of irritation in the nose, throat, and larynx. The aim of the physician should be to restore all organs to their normal state.

Some Observations upon Cataract Operations and After-treatment.—DR. A. W. CALHOUN, of Atlanta, read the paper. He reported nine hundred and four operations, and claimed one hundred per cent. of successes since the introduction of cocaine and antiseptics. In regard to age, the number of hard cataracts was as follows: 138 from 25 to 40 years of age; 82 from 40 to 50; 98 from 50 to 60; 157 from 60 to 70; 104 from 70 to 80; 28 from 80 to 90; 11 from 90 to 94.

Gunshot Wound of the Stomach.—DR. A. A. SMITH, of Hawkinsville, read this paper, reporting a case of a negro who had such a wound. The bullet was passed per rectum, the wound healed by primary union, and the patient returned to work one week from date of injury.

Some Practical Points in Reference to Eye-strains, was the title of a paper read by DR. R. O. COTTER, of Macon. He said many troubles, especially headaches of the vertex, temporal, and frontal regions were due to uncorrected errors of refraction.

Plaster of Paris in Surgery, was the title of a paper read by DR. WILLIS F. WESTMORELAND, of Atlanta, illustrating the proper method of applying splints.

Preliminary Observations on the Behavior of Iodine in the Presence of Camphor, Menthol, Thymol, etc.—DR. NUNN, of Savannah, read this valuable paper. The presence of the materials makes iodine soluble; for instance, a mixture of menthol and camphor liquefies, and in this liquid iodine is very soluble.

Eclampsia after Delivery, with Report of Cases.—DR. L. G. HARDMAN, of Harmony Grove, read the paper. Eclampsia frequently occurs, chiefly in patients with pyelitis; and pus in urine, coming certainly from the kidneys, is an indication for abortion.

Tonsil Exeisions.—DR. A. G. HOBBS, of Atlanta, read a paper on this subject, reporting over four thousand cases and presenting a new and improved instrument.

Extirpation of the Rectum for Carcinoma, was the title of a paper read by DR. MCFADDEN GASTON, of Atlanta. He reported a case in which the patient did well after the operation for eight days, when he died of septicæmia.

The Treatment of Hæmorrhoids by Carbolic Acid Injections.—DR. J. W. HALLUM, of Carrollton, read a paper on this subject. His mixture is pure carbolic acid one part, and pure glycerine two parts, and enough morphine and tannic acid that ten drops of mixture will contain one-quarter of a grain each.

Election of Officers.—*President*, Dr. A. A. Smith, of Hawkinsville; *First Vice-President*, Dr. George J. Grimes, of Columbus; *Second Vice-President*, Dr. R. H. Taylor, of Griffen; *Treasurer*, Dr. C. E. Goodrich, of Augusta; *Secretary*, Dr. D. H. Howell, of Atlanta.

The Association adjourned, to meet in Americus, on the third Wednesday in April, 1893.

Medical Heroism.—Three men were recently rendered unconscious by fumes while clearing out a blast furnace at Sunderland, England. Dr. Glen ascended to where the men were working on the top of the stove, lashed himself to a rope to prevent his falling, and for fully an hour applied artificial respiration, his efforts being finally crowned with success.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

SIR WILLIAM ROBERTS ON THE CAUSES AND TREATMENT OF URIC ACID GRAVEL—CHIMNEY SWEEPS' CANCER, IS IT DECLINING?—THE LATE SIR WILLIAM AITKEN, F.R.S.—SIR WILLIAM ROBERTS ON THE CHEMISTRY AND THERAPEUTICS OF GOUT—MEDICAL CANDIDATES FOR PARLIAMENTARY HONORS—THE FULHAM SCARLET-FEVER CASE.

LONDON, July 2, 1892.

In my last letter I said that Sir William Roberts, in his recent lectures at the College of Physicians, stated that deficiency of salines and of coloring matter in the urine might be regarded as factors in the chemical etiology of uric acid gravel. Deficiency of saline matters, he said, was probably an influential factor in the disproportionate frequency of stone among the children of the poor, and its undue prevalence among the natives of India. The children of the poor were fed largely on farinaceous articles, and rice formed a large part of the diet of the natives of India; in both cases there was a deficiency of mineral matters in the food. On the other hand, the well-known immunity of sailors from stone and gravel depended, no doubt, as shown by Mr. Plowright, on the prodigious quantity of salt they habitually consumed with their food. In chronic Bright's disease, where, with contracting kidneys, the urine was conspicuously pale and often almost entirely devoid of pigment, deposits of uric acid were not uncommon, and actual renal gravel sometimes occurred; the percentage of salines was also low, but probably the most potent factor in the precipitation of uric acid in these cases was the deficiency of pigment in the urine. Poverty of the urine in salines and pigments, however, only accounted for certain limited groups of calculous cases. Calculous patients among the easy classes—especially those of a gouty type—usually voided a urine which was full colored and abundantly rich in salts, and we must seek in some other direction for the cause of the morbid tendency. The lecturer thought that in such cases the determining factors were to be found in the proportion of uric acid in the urine, and in the degree of acidity of the urine. A sharp distinction should be drawn between the percentage of uric acid in the urine and its rate of secretion. The proportion of uric acid in the urine bore no constant relation to the rate of its excretion by the kidneys. The discharge of uric acid reached its highest level during the digestion and absorption of food, but its percentage in the urine was not high, owing to the fuller volume of urine at this time. On the other hand, after prolonged fasting and during sleep, the hourly discharge of uric acid sank to its lowest point, but its percentage in the urine touched its highest pitch. The occurrence of uric acid gravel, moreover, was not a reliable proof of an excessive output of uric acid, nor even of an undue percentage of the same. It was, though, susceptible of proof that, other conditions being favorable, a high percentage of uric acid in the urine became a potent factor in the determination of uric acid precipitation, and Sir William Roberts quoted some observations which he had made on this point. Speaking next of the acidity of the urine, he said that, in some cases of gravel, he had found it twice as high as the normal average. In two such cases the urine was found to decompose the purified amorphous urate as rapidly as distilled water; when, however, its acidity was reduced to the normal level by the addition of sodium carbonate, it had then no more power in this respect than healthy urine, showing clearly that the determining factor in these cases was solely excess of acidity. Experimenting on normal acid urines, it was found that the addition of an exceedingly minute quantity of an alkaline carbonate postponed the time of precipitation of uric acid very notably. The differences between the alkaline carbonates of potassium, sodium, and lithium were only found to be such as were proportionate to the differences between their atomic weights.

From these considerations Sir William Roberts passed on to the treatment of uric acid gravel. He pointed out that this must be mainly preventive, and that the chemical force requisite to prevent the precipitation of uric acid in the urinary channels is almost infinitely small as compared with the force necessary to redissolve a concretion already formed. It was important to fix our eyes on the urine itself. Uric acid gravel was constantly seen as an independent disorder in persons otherwise healthy. The circumstance that uric acid figured as a common factor in both gravel and gout had led certain persons to the opinion that the two complaints were identical. This was not correct. Many gouty persons were never troubled with gravel, and many subjects of gravel were never troubled with gout. He was satisfied, from repeated observations, that in the immense majority of cases of uric acid gravel in this country the immediate determining cause of the precipitation was excessive acidity of the urine. The most important point in preventive treatment was to diminish this acidity, and all other schemes of treatment sank into insignificance beside this. The deposition of uric acid was most imminent when there was a conjunction of the several conditions, *i.e.*, when the urine was scanty, hyperacid, and rich in urates. Such a conjunction was most fully developed during sleep—during which period, also, the renal stream was most stagnant. A study of the facts indicated that if we safeguarded the night, the day might generally be left to take care of itself, and this theoretical consideration was fully in accord with experience in the treatment of uric acid gravel. In the milder cases a single full dose of the alkalizing agent taken at bedtime sufficed to prevent the recurrence of colicky pains and the discharge of uric acid concretions. The citrates and bicarbonates of potash and soda were the most effective. The citrate of potash was perhaps the best preparation, as it had little taste and sat comfortably on the stomach. The dose for an adult should not be less than from forty to sixty grains dissolved in three or four ounces of water. In severer cases, a second but smaller dose should be taken in the night—not a difficult matter to arrange with calculous patients, who rarely passed the night without a call to empty the bladder. In some cases additional doses of the antacid were required, and the right time for these was two or three hours after breakfast and two or three hours before dinner. A matter of some importance in the management of cases was the arrangement of meal times. Each meal acted on the urine as a dose of alkali, and also as a diluent, and in both these ways operated as a protective against uric acid precipitation. Subjects of gravel should be warned not to allow too long an interval to elapse between their meals. Referring to the contradictory advice on diet and regimen given by various writers, the lecturer said that the only point which had been really made out was that the excretion of uric acid was diminished by lessening the albuminoid ingredients of the food. But this class of aliments was absolutely essential to nutrition. It appeared that the only practical outcome was this: that persons subject to uric acid gravel, and who were also troubled with a large appetite, should seek to lessen their cravings and to lessen the intake of nitrogenous material by the free use of farinaceous articles of food; with salads, fruit, and garden vegetables, all of which were comparatively poor in albuminoid constituents.

It has long been an accepted surgical doctrine that chimney-sweeps' cancer is becoming less common in this country. Dr. William Ogle called this view in question a few years ago, and in lecturing on the subject recently at the College of Surgeons, Mr. Butlin, retracting his own former opinions, produced evidence which may be said to completely pulverize the doctrine in question.

He showed that it has always been a rare affection, but pointed out that it was not becoming rarer. It was undoubtedly rare in other countries—a circumstance which Mr. Butlin attributed to the superior protection afforded by clothing and washing, as to which he gave some interesting information which he had obtained. He agreed that chimney-sweeps' cancer is a comparatively mild malignant disease. Quoting statistics as to the incidence of malignant disease in various parts of the body, he said it might safely be averred that the tissues of the scrotum were not in the least disposed to the occurrence of cancer. The inference was strong that there was something in the trade of a sweep which modified the skin of the scrotum to such an extent as to render it liable to the occurrence of cancer, more liable than the integument of any other part of the body; for sweeps were not more liable than other persons to cancer of the face, lips, and other parts. Everything led to the belief that the effect of the soot was merely to prepare the tissues of the scrotum for the occurrence of cancer, either by its mechanical or chemical influence, and the evidence was strongly in favor of the latter, for there was immunity from cancer in other callings which exposed the scrotum to mechanical irritation. There were cases on record showing such an influence from the application of soot to other parts of the body.

British medicine sustains a loss by the death of Sir William Aitken, Professor of Pathology at the Army Medical School, Netley, which took place this day week. Army surgeons will remember Aitken as a pathologist and as a teacher, and his pupils must be many, for it is thirty-two years since he received his appointment. His large "Manual of Medicine" made him known to a larger circle, and for years it was regarded as *the* book to read for the higher examinations. His death will cause general regret, for he was highly esteemed.

London, July 9, 1892.

In his third "Croonian Lecture," Sir William Roberts traced the chemical history of uric acid in relation to gout. He said the evidence brought forward by Sir Alfred Garrod appeared to him to be conclusive in favor of the view that the deposition of the crystalline biurates was the actual cause of the joint troubles in gout. The lecturer described a number of experiments which he had made on the solubility of sodium biurate in various media. In distilled water it dissolved pretty freely (1 in 1,000), but in blood-serum or synovia but sparingly (1 in 10,000). He found that a solution in water of the salines of blood-serum behaved with uric acid and the waters exactly like serum itself, and this fact was made use of in investigating the chemistry of the urates, though the results obtained were checked by comparing them with those obtained with blood-serum in similar circumstances. With regard to the solubility of sodium biurate in saline solutions at the temperature of the body, it was found that the solubility was decreased by the presence of salts of lime, magnesia, or ammonia, and still more so by soda salts. Salts of potash had no effect either way. The influence of a salt was found to depend solely on the nature of the base, and alkaline salts did not differ in the least from salts with a neutral reaction. When uric acid was digested at the temperature of the body with blood serum it passed into solution in combination with a base. The combination could not be biurate, because sodium biurate was almost insoluble in blood-serum; nor could it be neutral urate, because the neutral urates could not arise in the presence of carbonates. The presumption remained that the combination was a quadriurate, and it was found to be so. The process, however, did not stop here, but the quadriurate gradually took up an additional atom of base and was thereby converted into biurate, and the biurate thus formed was, after some delay, eventually precipitated in the crystalline form. When synovia, instead of serum, was employed, precipitation of biurate began distinctly a little earlier. An interesting point in connection with the chemistry of the urates was the occurrence of gelatinous modifications of them: Dr. Ord had regarded these forms as true colloids, but Sir William Roberts thought they were hydrated salts. It might be inferred from the facts put forward that in the normal state uric acid was primarily taken up in the system as a quadriurate, that it circulated in the blood as a quadriurate, and that it was finally voided with the urine as a quadriurate. In perfect health, elimination was sufficiently rapid and complete to prevent any undue accumulation in the blood. In the gouty state this tranquil process was interrupted, either from deficient action of the kidneys, or from excessive introduction of urates into the circulation, or from some other cause, and the quadriurate lingered unduly in the blood and accumulated therein. Circulating in a medium rich in sodium carbonate, the quadriurate gradually took up an additional atom of base, and was thereby transformed into biurate. This altered the physiological problem. The uric acid—or, rather, a portion of it—no longer circulated as the more soluble and presumably easily secreted quadriurate, but as the less soluble biurate, which was probably less easy of removal by the kidneys. The biurate thus produced existed at first in the gelatinous modification, but with the lapse of time and increasing accumulation it passed on into the almost insoluble crystalline condition, and then precipitation became imminent, or actually occurred. It was experimentally found that these changes took place more rapidly at 100° F. than at the temperature of the room, and also increased in rapidity as the proportion of uric acid in solution increased. The addition of sodium salts hastened precipitation; that of potassium salts sensibly retarded it, but did not appreciably diminish its eventual amount. Calcium and magnesium salts delayed precipitation, but their action in this respect was insignificant, or even doubtful.

In his fourth lecture Sir William Roberts discussed the topography of uratic deposits. Analyses showed, he said, that the tissues which were most liable to uratic deposits were those which were richest in sodium salts; this corresponded with the fact shown in the laboratory, that the dominant factors in uratic precipitations were the proportion of urates and of sodium salts in the solvent medium. The connection between synovia and gouty deposits was evidently very close and special; synovial fluid had itself been repeatedly found heavily laden with crystals of sodium biurate. With regard to the articular cartilages it could be demonstrated that the uratic precipitation actually took place from the synovial fluid, and was not self-originating in the cartilaginous substance. This process could be artificially imitated in the laboratory, and a counterfeit gouty joint could be produced in the articulations of a dead animal. Why did gouty precipitation take place preferentially in synovia rather than its cognates, the serum of blood and lymph? Why did the joints differ so much from each other in their liability to attack? It might be that there was some special attraction in the joints for uric acid. Synovia, also, was a comparatively motionless fluid, while serum and lymph were in ceaseless motion. Then, as regarded the varying liability of different joints, it was an observed fact that the synovial fluid in different joints presented differences in the relative proportion of their constituents. Frerichs had shown that in animals the synovia varied with the mode of life. In idle animals the synovia was more watery, but contained a larger proportion of mineral salts, which might consist almost entirely of sodium salts. We might, perhaps, here discern a reason why sedentary patients were more subject to gouty deposits.

With regard to the mode in which uric acid acted injuriously on gouty patients, Sir William Roberts thought the mechanical theory offered a natural and complete explanation. The crystalline urates precipitated in the joints acted as foreign bodies and excited irritation. This theory had been regarded as inadequate to explain the phenomena of irregular gout, and it had, therefore, been assumed that uric acid was possessed of toxic properties.

He could not, however, accept the latter view, and he thought that uratic precipitation in various parts of the body afforded a sufficient explanation of the phenomena of irregular gout. This mode of viewing the subject enabled us to bring the diverse morbid effects of uric acid into uniform line. Uric acid and its compounds were deleterious simply because of their sparing solubility in the bodily media. It might be said that the final cause of uric acid gravel was the sparing solubility of free uric acid in urine, and that the final cause of gouty precipitation was the sparing solubility of sodium biurate in blood-serum, lymph, and synovia.

Coming next to the subject of treatment in gout, the lecturer remarked that it had been shown that one of the main factors in determining uratic precipitation was the percentages of urates in the medium. The ingestion of large quantities of proteid matter was attended with an increased production of uric acid. It was not clear that animal proteids differed in this respect from vegetable proteids. But as the commonly used articles of food of animal origin were richer in proteids than the commonly used articles of vegetable origin, it was true that a vegetable diet was less productive of uric acid than an animal diet. The most trustworthy experiments indicated that fat, starch, and sugar had no direct influence on the production of uric acid, but as the free consumption of these articles naturally operated to restrict the intake of nitrogenous food, their use had indirectly the effect of diminishing the average production of uric acid. He had been in the habit for some years of directing gouty patients to restrict their consumption of common salts. Lessening the intake of salt with food only abated its proportion in the blood to a slight extent, because the blood had the faculty of extracting salt from the fluids and tissues of the body; but, this being so, the amount of salt in the synovial fluids and fibrous tissues was considerably diminished by such a regimen. Medicinally, alkalies had been largely used in the treatment of gout, but modern researches went to show that the belief in an acid dyscrasia in gout rested on a pure assumption. Carbonate of lithia and piperazine had been, on chemical grounds, introduced into the treatment of gout, but he had found experimentally that the addition of minute amounts of these substances to blood-serum or synovia had no effect in enhancing the solvent power of these media on sodium biurate, nor the slightest effect in retarding its precipitation from serum and synovia artificially impregnated with uric acid. If these bodies had any beneficial action in gout, it was certainly not due to their solvent action on the material of gouty concretions. As to the use of mineral springs, those containing sodium salts should be avoided, or used but sparingly. There could be no doubt that the efficacy of "indifferent" waters depended on their watery constituent. They diluted the blood temporarily, and lowered its percentage of urates and sodium salts.

The medical candidates for parliamentary honors have not been very successful at the polls as yet. Dr. B. W. Richardson, F.R.S., has been defeated, as also has Dr. Verdon, Medical Officer of Health for Lambeth.

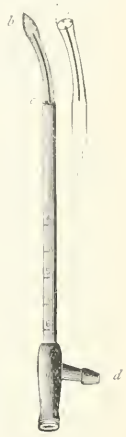
Scarlet fever is considerably on the increase in London. A recent case, at Fulham, has excited considerable discussion, and is likely to be quoted frequently in the legal interpretation of the Act for the compulsory notification of infectious diseases. A conflict of opinion took place as to the nature of the disease. The medical officer of health pronounced it to be scarlet fever, and so did several other medical men. The mother, though, had sought other advice, and the medical man she had summoned obtained the opinion of Dr. Phillips, Physician to the London Fever Hospital, and of Dr. Cayley, Physician to the Middlesex Hospital and Consulting Physician to the Fever Hospital, that the case was not of such a nature. A magisterial order had been issued for the removal of the child to one of the fever hospitals, but this was disregarded and Dr. Cayley took the child into the Middlesex Hospital. The magistrate censured Dr. Cayley and inflicted a fine of ten pounds on the mother, which, however, has been remitted by the Home Secretary.

New Instruments.

AN IMPROVED CATHETER, AND SOME REMARKS ABOUT TREATING THE URETHRA.

By C. WAECHTER, M.D.,
NEW YORK.

CHRONIC inflammation of the urethra depends most generally—aside from strictures—upon diseased conditions of the posterior portion of the canal, especially the pars prostatica; anteriorly it is usually but little affected, and for this reason, in treating it, it is useless to make injections by means of a common syringe, since they will not reach the seat of lesion. Consequently the treatment of chronic gonorrhœa is attended frequently with considerable difficulty, the more so if strong remedies be used, producing great pain in the anterior part of the urethra.



For some time past it has been my desire to find some simple means by which the posterior part alone of the canal could be treated The present instruments (*i.e*, Ultzmann's tube, the endoscope, etc.) answer but partly all indications. After many unsuccessful attempts I have now been able to have an instrument made which answers the purpose admirably. The accompanying figure demonstrates itself. The injecting fluid enters at *a*, running through a narrow canal, and making its issue at the point *c*, whose openings are directed backward. The fluid comes then in contact with the mucous membrane, re-enters the catheter at *c*, and flows off at *d*. Consequently the anterior part of the canal is entirely avoided, and strong solutions of nitrate of silver, etc., can locally be applied without producing any considerable pain.

The course of my procedure is therefore as follows: A patient presenting himself with a chronic inflammation of the urethra is thoroughly examined by means of the bulb sound or endoscope, and the condition of the urine is also ascertained. Is it, for instance, a case of chronic gonorrhœa seated in the prostatic portion, I irrigate the entire canal with some weak antiseptic solution—boracic acid, or, as has been of late recommended by Professor Winternitz,[1] a decoction of whortleberries. Is the irritation in consequence of the first examination but little, the irrigation is continued the next day, and a bougie is applied as far as the neck of the bladder. A weak solution of argent. nitr. (one sixteenth grain to the ounce) is then used and brought in contact with the entire canal in order to diminish the sensibility of the mucous membrane and neck of the bladder. At each successive treatment the strength of the solution is increased, sounds are used, besides lukewarm sitz baths, a proper diet, and internally, alkalies, etc. In the meantime the patient is ordered to use a deep injection of a weak astringent once or twice a day. If a catarrh of the bladder be present, irrigations of boracic acid, alum, or nitrate of silver are employed. After the irritability of the mucous membrane in this manner is arrested, I make use of a stronger solution of silver, with the above described catheter, every second or third day, up to a strength of fifteen or twenty grains to the ounce. The injections are borne, as a rule, without any inconveniences. I have in this way been enabled to cure obstinate cases, although they may have existed for years.

[1] Blätter für klinische Hydrotherapie. Wien.

It is quite prudent to cleanse the urethra with tepid water when the catheter is introduced before making the injections. In order to bring the solution in contact with the entire mucous membrane, the catheter should be slowly turned while injecting.

This catheter has been especially beneficial in cases of spermatorrhœa; the solution finally used of nitrate of silver is forty to sixty grains to the ounce, without producing great pain to the patients. I may here mention the fact that spermatorrhœa is more frequent than is generally acknowledged. If the urine of a patient suffering from chronic prostatitis (sexual weakness, neurasthenia) be examined as the same is voided during defecation, frequently spermatozoa are detected. Even a small unnatural loss of semen may cause a considerable disturbance to the nervous system. I am now about investigating whether a similarly constructed instrument can be made for the use of the uterus or rectum.

The catheter is made of hard rubber, as is also the syringe; the former can be separated into three parts, easily cleansed, and is manufactured in different sizes.

220 East Tenth Street.

AN IMPROVED STETHOSCOPE FOR USE IN AUSCULTATORY PERCUSSION.

By F. W. KOEHLER, M.D.,
LOUISVILLE, KY.

While practising auscultatory percussion in the usual manner not long ago, the idea struck me that it would be an advantage to have a percussing apparatus inside the cylinder of a stethoscope. The dentists have an instrument, used for plugging teeth, the principle of which can, quite readily, be utilized in constructing such a percussion stethoscope. It consists of a cylinder which contains a metal rod, and has attached to one end a rubber bulb by means of a section of tubing. On compressing the bulb the metal rod is driven down, and on relaxing it it is drawn up.

The force of the blow given by the rod is of course dependent on the force exerted in compressing the bulb, and is therefore under nice control. In adapting this mechanism to the stethoscope only one additional part is necessary, viz., a plessimeter.

This is attached to the margins of the bell of the stethoscope in such a manner that its surface projects slightly. It is, however, so attached that when the stethoscope is pressed upon the body of the subject to be examined it is forced back, thus allowing the margins of the bell to come in contact with the flesh. The plessimeter remains, no matter what the position of the subject may be, in close apposition to the body. On compressing the bulb of the instrument the metal, or, better, hard-rubber, rod is driven down on the plessimeter and the characteristic sound of the part percussed is conveyed with great clearness to the examiner's ears.

Tafel Brothers, of this city, are getting the instrument out for me. It will be so arranged that it may be attached to the upper part of any ordinary binaural stethoscope.

It seems strange that such an instrument should not have been already invented, but as far as I know it has not been. I do not remember to have seen any notice of the contrivance in any text-book with which I am familiar, nor have I found it in any surgical-instrument catalogue.

Pemphigus Neuroticus.—Dr. Neuberger speaks of a case similar to that described by Doutrelepont, under the name of multiple gangrene of the skin, and which Kaposi has designated zoster gangrenosus atypicus hystericus. The patient was a female, aged twenty-six, and very hysterical. She rapidly sank, and after death syringomyelia. Contrary to the case reported by Kaposi, necrosis of the epithelium first took place, and that of the papillary layer followed.—*Journal des Maladies Cutanées*, May, 1892.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending July 30, 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	34	17
Scarlet fever	48	8
Cerebro-spinal meningitis	0	2
Measles	149	22
Diphtheria	72	27
Small-pox	7	1
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0
Mumps	0	0

An Action for Libel against an Egyptian Paper.—Dr. Milton, of the Native Hospital at Cairo, has brought an action for libel against *Le Bosphore*, a newspaper of that city, on account of a violent article attacking the English doctors practising in Egypt, and containing allegations regarding them which are declared to be wholly without foundation. Dr. Milton claims substantial damages.

The Physician and Literature.—It is sad to hear it commonly said that the day of learned physicians is past, that they are gone with periwigs and bric-à-brac. And I have had already to observe to my pain that the Cambridge medical student of to-day is by no means "learned;" that too often he thinks loosely, and that he does not always write even the English of the gentlemen who do the fires and the murders for country journals. On his Latinity I will discreetly keep silence. Hence I fear that we are not only changing our methods, but losing sight of our standards, and of this we have said we are to beware; we may well desire, nevertheless, to see not only change but even a revolution of the methods of teaching in public schools as well as in our own classrooms—methods now hopelessly astray. Yet one of my colleagues in the last medical and surgical examinations said to me: "A physician should be a kind of poet"—a hard saying, but a saying of deep wisdom. For to their patients what are the most scientific physicians, if they be διανοητικοὶ πνεῦμα μὴ ἔχοντες, if they know all things save the human heart? "On ne connaît jamais parfaitement que celui que l'on devine." How in Cambridge are we to endow young men with these riches of experience and to give them this faculty of divination, save by literature? We will repeat that a method is an economy; a true method is a path leading us directly into the centre of the experience of the world, leading us, early in life and with ease and pleasure, whither millions of weary travellers have never come, giving us what millions of hearts have yearned after but yearned in vain. Our disciples must come to us not only for mental furniture, not only to learn a gainful craft, but to breathe here the spirit of disinterested knowledge and of wide humanity.—Professor Clifford Allbutt, Inaugural Address.

Purèe de Bacilles à la Chicago.—The American Health Resort Association, an organization for the collection and dissemination of reliable data as to climate, health resorts, and mineral waters, for the guidance of the medical profession, met at the Tremont House June 30th. Professor W. S. Haines, of Chicago, read a paper, in which he said: "Water that contained up to two hundred and fifty bacteria to the cubic centimetre was classed as good water." In Chicago water examined by him during the last few months he found at no time less than two thousand bacteria to the cubic centimetre, and sometimes as high as eight thousand.—*Chicago Tribune.*

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PAPERS ON DISEASES AMONG INDIANS.

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(Illustrated by photographs taken by the author.)

SANITARY EFFECTS OF CIVILIZATION.

THE impression that civilization is fatal to the Indian constitution—that, like the hare or the quail, under efforts at taming he will pine and die—is a part truth that leads to much error. The "transition period," so indefinite and so much dreaded, has danger only under mismanagement. I will state my opinion of the matter thus: *If the Indian were lifted at once from the wildest savagery in which he can now be found, to full civilization—that is, to comfortable and hygienically constructed clothing and housing, to abundant and well-prepared food, to a knowledge and practice of the rules of health governing the more intelligent individuals of the white race—his condition would at once and permanently be greatly improved as to health and longevity.* On the other hand, *his primitive savage state was better as to health and longevity* (*and in parenthesis I may add morals as well*), *than the partly civilized state in which he now exists.*

The evils of imperfect civilization and misapplied efforts at civilization, however, are serious enough to deserve careful attention.

Agent James McLaughlin, for years in the Indian service, describes these conditions in the following words ("Comr. Report, 1887"):

"There is no doubt that the Dakotas of the 'Great Sioux Reservation' are decreasing, and that the decrease has been gradual for several years past, as was shown by the falling off in numbers at the various agencies when all were enumerated on the same day, September 30th last. A slight diminution is likely to continue through the present transition period, while passing from the wild nomadic life to civilization, and until they have learned to obey the more important laws of health. The indifference of the Indian to exposure, disregard for wet feet, irregular habits, eating at one meal sufficient for several, frequently eating a dozen times a day, and again going without food for a great length of time, together with the exhalations from their floorless and poorly ventilated cabins, cannot but be detrimental to health and tend to the development of fatal diseases."

As in morals they have received the evils of civilization, so in sanitation they have received its evils—bad ventilation, over-heated houses, etc.—and have not yet attained to its advantages.

Even more minute and accurate is the description of Dr. Nat. McKitterick, of a branch of the same nation (Sioux):

"The transition of these Indians from their savage state has made changes in their physical condition. Their mode of cooking and living by chase was conducive to health and the development of the muscular system. Living in the tepee or lodge had the same effect, for the laws of sanitation were easily lived up to; when the surroundings became uncomfortably dirty, the tepee was moved to some clean spot. But since the advent of the log-house among them, things have changed; it is not practicable to move the house, and not being the most thrifty and industrious people in the world, the filth remains about the house. Their food being different from that to which they were formerly accustomed, they have never learned to cook properly; their crude way of cooking and making bread does not stimulate digestion, hence cathartic remedies are an essential feature in their lives."

On this reservation,[1] to replace the cloth tepee, have been built a number of log or frame cabins; the latter are 16 × 18 feet, rooms 8 feet high, with double dirt-filled walls, dirt roof, one door, and in the case of fifty built three years ago, one window in a single fixed sash. Fifty built more recently have the single window of two small, movable sashes. In this one room are placed usually two stoves, one for cooking, and one for heating. Often in winter, with all openings closed, fires are kept burning in both stoves, and inhabitants to the number of ten or more occupy the room.

Let me appeal to physicians, to those in authority, and to the public, that there be less talk about "problems" and "policies," and more attention to housing, sanitation, and morals of our Indian wards.

The most powerful facts toward proving the sanitary benefit of civilized surroundings are to be seen in the case of children brought from the camp to the boarding-schools, where they are at once placed in correct hygienic conditions.

The benefit of this change, where the child is not carried to a different and less salubrious climate, is observed in every case; the benefit is rapid, decided, and permanent, in the opinion of all physicians who are so situated as to observe its effects. It is emphasized by the return of the child already improved in health from the school to the camp; many children are then seized with pneumonia or consumption, and quickly carried off.

In this connection I desire to call attention to the evil of too long confinement of Indian children at study or recitation. It is the custom at many schools to so occupy them for seven or eight hours. This is excessive for a child during his first few years of school life, or indeed ever. I should say four, or at most five, hours, including the one hour in the evening required by the Indian office regulations, should be the extreme limit.

The impression prevails among agency physicians that the transfer of Indian pupils from their reservation to schools of different altitude and latitude is often harmful. From Crow Creek, Dak., comes the statement (Dr. Treon): "Decidedly improved by transfer to school, but cannot stand any radical change in climate; the mortality among the children sent from here to Hampton has been very heavy." From Anadarko, I. T., Dr. W. W. Graves: "The change from camp life to that of the boarding-school is anything but favorable to health, so far as relates to Carlisle and other schools in cold northern sections. It is very different when they attend the school we have here, where the children are in the same atmosphere where they have been born and reared."

That Indians suffer severely from change of climate has been shown many times. Its destructive influence was especially felt by the Poncas, and by Joseph's band of Nez Percés, transferred, the one from Dakota, the other from Idaho, to the Indian Territory, and of the Cheyenne and Arapahoe Indians from the Northwest to

[1] "This tribe," or "this reservation," when used in these papers, refers to the *Crow* tribe or reservation, where the author was stationed.

the same section. All these a few years later, having become accustomed to the climate, suffered less.

I have endeavored to accumulate statistics bearing on this point, but they are not so full nor so accurate as to enable me to make a safe deduction.

Captain Pratt, in a private letter, kindly furnishes me the following figures, for the ten years 1879 to 1889 :

Aggregate attendance	4,021
Number returned to reservation on account of ill health	162
Number of deaths during school year	98
Or the averages for year attendance	402 1/10
Sent home for ill health	16 2/10
Died	9 8/10

These statistics are valuable, but as I have not equally accurate from reservations or reservation schools, I am unable to make a comparison.

Dr. Martha M. Waldron reports for Hampton during ten years :

Attendance	467
Died	31
Sent home for health	111

I am myself of the opinion, however, that the mortality is greater in Eastern schools, than at schools on reservations, and less than in the camp. This statement is entirely without prejudice, since I strongly favor Eastern schools for the education of Indian children.

Tuberculosis among Indians.

Consumption and scrofula are the arch-enemies of Indian life ; unlimited by tribe, latitude, or longitude, by altitude or humidity ; just as they are known to all nations and all countries, so they find their victims in every tribe and stand between the Indian race and increase.

Of 1,453 deaths from all diseases in 1888, more than 900 were from diseases of the respiratory organs and scrofula. From consumption alone there were 541 deaths ; that is, nearly forty per cent. of all mortality was due to the single disease, consumption. This percentage, I think, was rather less than for other years (whose statistics are not at hand), since the winter of 1887–88 was exceptionally mild and favorable to consumptives.

A recent author [1] who has made a special study of this disease, develops the figures that of the thirty-five million deaths occurring annually upon the globe seven million are due to phthisis. This is twenty per cent. So, at the very safe rate of deaths from consumption among Indians given above, it is seen that the proportion caused by this disease is double the average for all races. In many tribes the proportion goes much beyond this, some physicians reporting fifty to seventy-five per cent. of deaths from this cause. Of 57 deaths among the Indians of Crow Creek Agency, Dak., 40 were from consumption, 4 from scrofula. Dr. Fred. Treon, the physician, in a paper before the Dearborn County (Ind.) Medical Society, says the yearly average is 40 deaths from consumption in that tribe of 1,200 Indians. Its importance cannot be over-estimated.

Probably in his primitive state of savagery, certainly in his present state of transition, the stamina of the Indian constitution is inferior to that of the white man. From due consideration of the matter my conclusions are : *The physical changes consequent to civilization increase in equal proportion proneness to disease and resistance to disease.* Concretely stated, the savage is less liable to become sick or be injured, but when sick or injured to the same degree, is more liable to die than a civilized man.

In an essay, Emerson uses this illustration, "Compare the health of the two men"—the savage and the civilized —"and you see that his aboriginal strength the white man has lost. If the traveller tells us truly, strike the savage with a broad axe, and in a day or two the flesh shall unite and heal as if you struck the blow into soft pitch, and the same blow shall send the white man to his grave." It has been a popular impression that in the degree in which the savage fell below perfection in mental endowment and development, in that degree he possessed physical robustness. This is but partly true. Savage races are healthy races just in the proportion that their lives are in accordance with the fundamental laws of health. Free from many disease-breeding causes found in civilization, they may escape these diseases ; if, on the other hand, their condition leads to exposures and other hygienic abuses avoided by civilized races, they at once meet the penalty.

Indians never attained that purity and simplicity of living which defies disease. When the Pilgrims landed in 1620, Somoset, a Wampanoang Indian, told them a "great plague" had destroyed most of the Indians who lived near about. I do not believe that at any time in their history they have been free from consumption and scrofula.[1] The many reasons for its vast increase in recent years will be advanced presently. I do not think the proneness to pulmonary troubles is new, nor due to civilization, nor a result of venereal inoculation.

That their resistance to disease is much less than that of the civilized races, I have seen the evidence at the bedside, in watching them yield and die from diseases that I felt sure any stout white man had easily thrown off. This is especially true of pulmonary diseases. I have never seen a plain case of catarrhal pneumonia (the usual form) make a perfect recovery, or, indeed, escape death eventually from phthisis.

Dr. O. S. Given, for many years physician-in-charge of various Indian tribes, states his conclusion thus : "The uncivilized man has not a good physical constitution. Indifference to exposure, utter disregard of all sanitary laws, irregular habits, alternating of gormandizing and fasting, consanguineous marriages, all tend to physical deterioration."

Captain Pratt, Superintendent of the Carlisle (Pa.) Indian School since its organization, asserts that mixed bloods even resist disease and death from pulmonary troubles better than pure bloods.

William G. Coe, Agency Physician to the Klamath Agency, Washington Territory, in his report for 1887, says : "Their powers for resisting disease are inferior to those of any race of which I have knowledge, and this is due not only to the fact that they are adynamic from hereditary disease characterized by struma, but all their habits tend to debilitate and render their recuperative powers nil."

The resistance to disease of the negro race is well known to be less than that of the whites. From a considerable experience in the treatment of both races I am fully convinced that the resistance of the Indian is less than the resistance of the negro. This is observed notably in the Hampton (Va.) Industrial School, where Indians and negroes are educated side by side. ("Comr. Report for 1887," p. 264.)

Tuberculosis is co-extensive with the Indian race. The single tribe that may be said to be free from these diseases I have been unable to find after diligent search. Those who inhabit the torrid sands of Arizona, and those in the frozen Northwest Territory of Canada, along the Western seaboard and in the Atlantic States—all tribes suffer more or less from consumption and scrofula. Certain tribes living in the arid regions of the Southwest, and others on the Pacific coast, I believe, are freest.

In the Indian Territory, and among a few tribes elsewhere, malaria becomes of greater importance than consumption as a mortality cause.

A popular impression that a malarial climate is a favorable one for consumptives, finds no confirmation in the history of Indian tribes, save that tribes whose chief cause of death in the Northwest was consumption, have died

[1] George A. Evans, M.D. : Handbook of Historical and Geographical Phthisiology, etc.

[1] In Peabody Museum (Specimen, 17,223) is a part of a vertebral column badly affected with caries—tuberculous—among prehistoric Indian remains. See cut, Orthopedic Surgery, Bradford & Lovett, p. 2.

with such rapidity from malaria when removed to a region where it prevails, that consumption becomes at once of minor importance.

Whether it be conceded or not that the savage was originally of inferior constitutional stamina, it is certain the "transition" has left him so. This has been written of elsewhere in accounting for the slowness of increase in Indian tribes. The sanitary evils in which they live are just those calculated to intensify a proneness to tubercular troubles, and to serve as exciting causes where the proneness exists. These evils may be classed as those of *dress, dwelling, and diet.*

The time is not beyond the memory of men yet living when many tribes of Indians lived in that animal simplicity that did not require any covering for the body save as protection from winter's cold. Then came the time of the fig-leaf, which period in their history is not yet past.

The usual *dress* of those tribes who have not adopted the habiliments of civilization is, for the male, a tunic or shirt; a breech-cloth, being a strip twelve to fourteen inches wide and two to three yards long, passed under a belt in front and behind, the ends forming front and rear aprons, the middle portions covering the parts about the breech; leggins and moccasins. Of these articles the only one essential to modesty and constantly worn is the breech-clout.

lodge or tepee, a conical tent of dressed buffalo robes having a single door at the side and a spacious opening at the top for the escape of smoke, and, incidentally, for ventilation. The fire was built on the ground in the centre of the lodge—the ascending current of warm air escaped at the top, and fresh air entering below and through the walls secured excellent ventilation. When the surroundings became at all unsanitary, the tepee was at once and readily moved.

The policy of the Government has been to confine them to special locations, and to induce them to occupy houses. This policy would be good were proper houses provided. Forty houses built for Indians of this (the Crow) reservation by Government contract, are each a single room 16 × 18 × 8 feet, with double, dirt-filled walls, dirt roof, one door, and one window of a single fixed sash. The condition within in winter is well described by Dr. W. McKay Douglass, of the Santee Agency, Neb. (1887): "Visits to their domicile at this time of the year impress me deeply. Mercury is below zero, wind blowing a gale, snow drifting high when I knock at the door for admission. In a tight little Government house I find all the cats, dogs, babies, and other members of several families congregated and unengaged, save in smoking, talking, and sleeping. Dogs fare equally with the human occupants. The windows are closed, and

Indian Lodge, and Method of Jerking Meat.[1]

The female dress is a single skirt fastened at the waist, or more commonly a loose gown reaching the ankles, with large sleeves, and bound by a belt at the waist; close-fitting leggins and moccasins.

In winter some addition is made of robes or blankets, which serve as clothing in day and bedding at night.

This style of dressing, from its construction and from the inferior quality of material substituted for the former rich robes, is not sufficient protection against severe weather.

The moccasin is especially objectionable, since it is soon soaked when the ground is wet and becomes worse than no covering at the time when foot-covering is most needed. Stout but soft shoes should by all means be issued to Indians by the Government; the brogans now furnished them are unbearable to the foot accustomed to the moccasin.

The Indians' unappreciation of exposure may be illustrated by this, that I have had them ride several miles in the rain, or walking, wade the ice-cold river, to get medicine for a cough.

The primitive *dwelling* of all plains Indians was the

these people and animals are breathing an atmosphere which has been polluted by the exhalations from disintegrating lung-tissue and the emanations from open sores."

I find such houses often occupied by fifteen or twenty persons, and heated by two stoves, the smoke exit being a tight flue; open fireplaces, of such value in ventilation of small houses, being unknown.

In winter Indians plunge from these furnaces into the below-zero outside air, thinly clad, fully realizing the evil result that might be anticipated. Differing from this in degree only is the evil result of the sweat-house, which will be minutely described elsewhere. Its influence on the production of pulmonary diseases is only equalled by its influence in bringing them rapidly to a fatal conclusion.

Houses occupied by other tribes differ in construction, but are alike in danger to health. The dwellings of the Pimas and Maricopas of Arizona, until the recent building of adobe houses, were half-spherical-shaped mounds, twenty feet in circumference and six feet high at centre, with single opening at the ground, constructed of branches of trees and straw woven with much ingenuity and covered with dirt. Some tribes of Apaches make their houses by excavating the sand a few feet in depth and covering over with poles, brush, and earth. In such

[1] The meat is cut in thin slices and hung in the sun or over the fire to dry, and this, called "jerked" buffalo or beef, may be kept indefinitely.

houses live often from ten to thirty persons. The Pueblo house is built of sand, stone, and mortar, from two to four stories high, and is entered through a small aperture by means of a ladder, which aperture is the only source of ventilation except that some larger dwellings have windows and doors. As the buffalo furnished robes for dress and skins for dwellings, so his meat was in former days the staple, almost the sole article of *diet* of the plains Indians. Abundance of wild meat "jerked" or dried, without salt, with a scanty supply of roots and wild berries, was the Indians' primitive diet.

The buffalo is gone, and Government rations, or scant subsistence obtained by their own labor, is the Indians' present diet. In this change is found a factor in the causation of consumption and scrofula.

Rations furnished by the Government to Indian tribes are in most cases entirely insufficient to maintain health. These rations are issued once in one, two, or four weeks; usually in the first half or two-thirds of these periods all the rations are consumed. The next supply is received after two to five days of fasting, and is the material for a feast. This regular succession of fasts and feasts deranges digestion and assimilation, and fits the constitution for the invasion of tuberculosis.

Some facts bearing on the special effect of *certain articles of diet* on the production of one or both of these diseases may be noted. The charge that the meat of the hog produces a tendency to scrofula, is met by the fact that the use of this meat is almost unknown among Indians, who, of all people, suffer most from scrofula. It is also well known that Jews, to whom hog meat is prohibited, suffer much from this disease.

A report from the Carlisle school, bearing on the effect of the pork diet, is interesting (Red-Man, February, 1889). "Hundreds of students of Carlisle go out into farmers' families and remain months. They, almost without exception, return to the school improved in health. Taking seventy-five of these young men from the most scrofula-tainted tribes, such as the Sioux, Apaches, Cheyennes, Arapahoes, Crows, Pawnees, etc., who have thus been out of school one or more years, they were asked, one by one, what kind of meat they had most during their farm experience. Forty-nine said more than half of their meat was pork; thirteen others said less than half their meat was pork, and the remaining thirteen had beef and fish. Eating mostly pork and improving in health is some disproof of the theory of pork favoring scrofula." From Hampton, on the contrary, comes this report: "About a year and a half ago it was decided to restrict the Indians altogether from the use of pork, which they had before, like the colored students, in alternation with beef. This change has been evidently beneficial in its effect upon general health, especially upon scrofulous tendencies." It may be observed, while considering the matter of diet, that while the Indian was formerly almost exclusively carnivorous, and is very much so still, yet *scurvy* is unknown among them. Their meat was eaten unsalted.

Henry C. Chapman's "Physiology" asserts that "a deficiency of oil on the one hand, and of fresh vegetables on the other, produce phthisis and scurvy, respectively," which statement meets a singularly accurate opposition in the fact that Indians ate largely of meats and almost not at all of fresh vegetables, and are free from scurvy but ravaged by phthisis. The rareness of scrofulous scars in the older members of this tribe, compared with the immense frequency of the disease in the younger members, leads me to believe that it has greatly increased in recent years.

Pulmonary tuberculosis and scrofula have been included in the same chapters and discussed together. The reason for this is that they are practically inseparable. It is not my purpose to enter the controversy as to their identity or non-identity, or of their relationship in the latter event. I shall make simply a statement of the facts as I find them among Indian tribes, and my own conclusion from these facts that one of three states obtains: 1st, They are identical; or 2d, one is the cause of the other; or 3d, both are due to the same general causes. I should be willing to rest this conclusion on the single fact that they are constantly associated. If a considerable number of cases of one of these diseases exist in a tribe, then cases of the other will certainly be found in the same tribe. Pott's disease and other bone and joint manifestations of tuberculosis are common in all tribes.

I have avoided any reference to syphilis in connection with these diseases, in order to introduce here, in more conclusive form, some facts bearing on their relation.

The theory that *scrofula* is only a manifestation, in the second or third generation, of the *syphilitic poison*,[1] bears the impress of a name so great in American surgery that writers may be awed from attempt at refutation. If the theory be true, in every case there must have existed syphilis in the parents before scrofula may be found in the children; the greater the prevalence of syphilis in the parents, the greater the prevalence of scrofula in the children, freedom from syphilis in the parents giving immunity from scrofula to the children.

The following parallel columns exhibit, among some dozen tribes, the conditions as to the prevalence of these diseases. These are from reports to me of Agency physicians in 1889, and include all the reports wherein the conditions as to these diseases were clearly stated, except those—a majority—where all three diseases prevailed.

Prevalence of Syphilis, Scrofula, and Consumption.

Agency.	Syphilis.	Scrofula and Consumption.
Yankton, Dak.	"Have never seen or treated any kind of venereal disease."	"Scrofula is the one fatal disease among these Indians; every Indian in the reservation is more or less affected by it. Consumption prevails to a large extent."
Sisseton, Dak.	"Neither syphilis, gonorrhœa, nor chancroid exists among these Indians."	"Consumption and scrofula have always existed, and to a very large extent."
Devil's Lake, Dak.	"Only a few cases of venereal diseases among these people."	"Consumption and scrofula prevail, and one-third of adult deaths are from them."
Green Bay, Wis.	"In three years have treated no primary or constitutional syphilis."	"Consumption causes fifty per cent. of all deaths."
Tulalip, W. T.	"Venereal diseases comparatively rare."	"Consumption prevalent to a great extent, proportion of fatality due to it about fifty per cent. Scrofula among children is prevalent to large extent."
Standing Rock, Dak.	"Venereals prevail but slightly."	"Consumption and scrofula prevail to enormous extent, and are chief cause of death."
Lower Brulé, Dak.	"Venereals are rare. I have not seen a case of Hutchinson's notched teeth . . . or other evidence of hereditary syphilis."	"Consumption prevails to alarming extent. Scrofula is present in sixty per cent. of Brulé Sioux under twenty-one years of age. I have seen scrofula and syphilis in same individual."
Osage, I. T.	"Free from venereals."	"Consumption and scrofula prevail; ten to fifteen per cent. of deaths due to them."
Crow Creek, Dak.	"Venereals are very rare; no history of their prevalence at any time."	"Consumption and scrofula quite prevalent; fifty die from them every year in population of 1,200."
Cheyenne River, Dak.	"Venereal diseases are rarely seen."	"Consumption and scrofula are the prevailing diseases." —Agt's Rep, 1878.
Western Shoshone, Nev.	"The venereals do not exist to any extent worth mentioning."	"Consumption and scrofula prevail to quite an alarming extent; probably fifty per cent. of deaths are due to them."
Hoopa Valley, Cal.	"Venereals prevail to great extent."	"Consumption very rare, only two or three per cent. of deaths due to it. Scrofula is rare; only present when due to syphilis transmitted from parents." (The writer supplements his facts with his theory.)

[1] Transactions of the American Medical Association, 1878.

These facts speak for themselves; it is seen that scrofula may be enormously prevalent where syphilis is unknown, and that scrofula may not be found in those tribes which are thoroughly inoculated with the venereal poison.

I, however, cannot affirm too positively my assent to the belief that syphilis decidedly increases the vulnerability of the constitution to scrofula and tubercular consumption, and that, on the other hand, struma decidedly decreases the resistance of the system to the invasion and ravages of the venereal poison.

"Consumption in these people," writes Dr. Fred. Treon, of Crow Creek Agency, Dak., in a paper read before the Dearborn County (Ind.) Medical Society, 1887, "appears in the adults to follow an acute attack of bronchitis or catarrhal pneumonia; while usually the first symptom to which your attention is called in the child is a looseness of the bowels, amounting at times to dysentery; at first the mesentery alone appears to be affected, but later on a cough sets in, dulness on percussion is perceptible over one or sometimes over both lungs at apex, and not infrequently at base, mucous and crepitant râles are distinctly heard. Expectoration of a tough mucous character, and often frequent and copious hemorrhages are present. I have never seen them with a chill. The patient sinks rapidly and dies from asthenia." This presents a true picture of the course of the malady. I may observe, however, that I have rarely seen copious hemorrhage, and when hemorrhage is a notable symptom I expect the disease to pursue a much less rapid course. In many of my cases a continued fever, hectic, was the first feature to attract attention, which fever, with the attendant diarrhœa from tubercular involvement of the intestinal canal, presents an *ensemble* of symptoms exceedingly difficult of diagnosis in the early stage from typhoid fever.

It may be observed that the form of pneumonia prevalent among Indians is almost exclusively catarrhal; of the croupous or lobar form I have not seen a single case in two winters' practice.

In my practice in the school on this reservation, in the winter of 1877–78, I was impressed with the fatal *influence of exposure* toward the production or excitation of tubercular diseases.

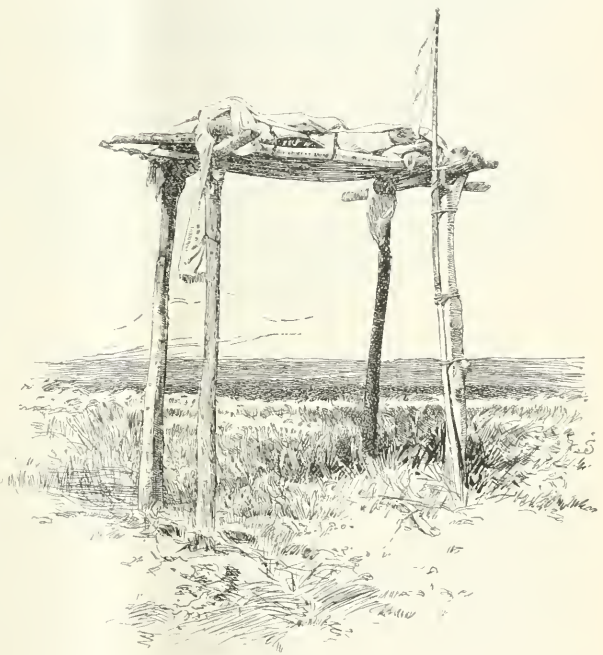
The girls were kept carefully indoors during inclement weather, and not one suffered a day's serious illness. An unusually severe winter required great exposure on the part of the boys in "drawing" fuel, and other out-door work. Of the boys, during the winter, one died of miliary tuberculosis, one of tabes mesenterica, one of pulmonary tuberculosis, and another never recovered from a severe catarrhal pneumonia, wasted, and died the next autumn. There was absolutely no difference in hygienic condition of boys and girls as to heredity, diet, dress, dwelling, etc., save only that the girls were protected from the severe and suddenly changing weather and the boys exposed to it.

The impression prevails pretty generally among the physicians of the Indian Service that *climate* exerts a very small influence on phthisis found among Indians. It is at any rate found in all climates, even those famed as being the most salubrious. My observations lead me to believe that it prevails most disastrously in the parts of the Northwest lying in Montana and Dakota. The climate of this region is dry and pure, the country being elevated and without stagnant water, or the elements of vegetable decomposition. It is found favorable to invalids of the white race coming into it. Several cases of phthisis have, under my observation, been held in abeyance.

So dry and pure indeed is the atmosphere that in scaffold and tree burial, as shown in the illustration, and which is the general custom of Northwest Indians, the bodies seem to dry and disintegrate without the usual evils of decomposition.

Of the tubercle bacilli I have said nothing, since I have been without the means of pathological investigation and could present only deductions from the facts presented, and others may draw such deductions as well as I.

Since writing the above paper I have received from the authors three valuable reprints bearing on these subjects: "Consumption among the Sioux Indians," by Dr. Fred. Treon, of Crow Creek Agency, Dak.; "Scrofula among the Sioux Indians," by Dr. Joseph B. Graham, Lower Brulé Agency, Dak., published in *American Practitioner and News*; and "Further Contribution to the Study of Consumption among the Indians," by Dr. Washington Matthews, U. S. A.



Scaffold Burial.

Dr. Treon lays stress on the probable causative relationship of beef-eating and milk-drinking to consumption. He then describes the slaughter. "Saturday, early in the morning, the cattle are shot down in the corral and the Indians drag them out, skin, and cut them up. I have observed them frequently, while slaughtering, eating the warm liver, tallow, and often the entrails, and great quantities of raw beef. In fact, much of the beef is dried, pounded up, and eaten without cooking. Frequently they eat animals that have died of disease days before, and to my mind here is a good solution of the trouble." The doctor has on several occasions seen steers with "big-jaw," or actinomycosis, received and killed for the Indians, and in this also he sees a ready method of infection. His picture of the slaughter is absolutely true, as I have many times seen it; and concerning the actinomycosis I may add that it is the constant custom for cattle-men driving their herds across Indian reservations to placate the In-

dians by cutting out and giving them all "big-jawed" steers, such being unmarketable, and so of no value to the owners.

The doctor suggests the following method of infection: "It would not be difficult to trace these microbes from the stomach to the mesenteric lymphatics, and even through the circulation to the lungs. Entering the blood with the chyle through the thoracic duct, finding their way through the left subclavian vein to the heart, whence they may be sent with the blood to the lungs, where a nest or home is often found for the parasite. Bartholow says ('Practice of Medicine'), every germ needs a specific soil for its growth, so the specific infective material of consumption must fall into a properly prepared organism to proceed to full development. It is needless for me to say that the mesenteric glands and lungs of these people are a well-suited soil for the bacilli of tuberculosis."

Tree Burial.

"Supposing that only one out of a thousand cattle received be affected with tuberculosis or actinomycosis, from the manner of dividing the beef it is possible, and probable, that one hundred persons may become inoculated by a single diseased animal."

The practical deduction from these theories, which are supported by many respectable names, is that greater care should be exercised by the Government in the inspection of beef and milk cattle received for Indian tribes, and the proscription by the same authority of giving of diseased cattle to Indians by cattle-men grazing on reservations or driving over them.

Dr. Graham accepts the unity of scrofula and tuberculosis, considering the former the manifestation usual in the child, the latter in the adult; he does not admit a venereal causation, but is of the opinion that syphilis is a distinct disease and can only be reproduced as syphilis.

In his tribe of less than thirteen hundred people, in two years, he treated thirty-two severe cases of scrofula, and by actual count at one time found two hundred and five, mostly under eighteen years of age, suffering from a less severe form of scrofula.

Dr. Graham also appreciates the danger of infection from cattle, and states as a fact noted by Alex. Rencountre, that the first case of scrofula among the Brulé Sioux occurred in 1869; that beef cattle were first delivered to these Indians in 1869. He urges the frequent violent epidemics of measles, with the resulting bronchitis and catarrhal pneumonia, as a powerful predisposing cause of consumption, to which I should like to add strong personal testimony. The effects of the "transition," of which I have written on previous pages, but with less force and conciseness than Dr. Graham in his valuable paper, is thus described by him:

"In the normal and uncivilized state the principal diet of the Dakotas was buffalo meat, the supply of which, only in exceptional times, was very plentiful. Their 'tipis' were made of buffalo skins, were well ventilated, and offered ample protection from the weather. Their clothing, of the same material, was sufficient for their needs. How do we find the Indians of to-day? Instead of the comfortable skin tipi, they now inhabit one of unbleached cotton which offers no protection from the cold of winter or dampness of the rainy season; or to the other extreme, a log cabin, with dirt floor, plastered till almost air-tight. Light is admitted through a single window, without any ventilation whatever. These houses are kept in winter at a temperature from eighty to ninety degrees Fahrenheit, and inside are practically dry at all times. Exhalations from persons and dogs, with sputa from consumptives and pus from scrofulous sores, are allowed to lodge in the walls and dirt floor. They are rapidly dried by the high temperature and suspended in the atmosphere of the room. Thus it may be seen that these houses are the greatest source of danger; veritable culture-soils and hot-beds, they furnish the best possible condition for the spread of tuberculosis when the bacilli lodge in the soil prepared for them by exposure, under feeding, and malnutrition. Not only is death lurking in the air of these places, but as the raw beef, sliced, is hung there to dry in winter, tubercle bacilli or spores may lodge in the beef, and as this is often eaten raw, another most formidable source of danger to others and of self infection presents itself."

I trust that this invective, added to my own, against the "house" built by themselves or built for them by the Government, may be seed to fall in good ground, and bear the fruit of houses better suited to their needs and less perilous to their health.

A New Parasite in Cancerous Growths has been discovered by Drs. M. A. Ruffer and J. H. Walker (*British Medical Journal*). The discovery has been confirmed by Professor Metschnikoff. The parasite consists of a central nucleus, that is, of a central part which, according to the reagent used, takes up the stain more deeply than the remainder of the body, or else stains quite differently from it. This nucleus apparently does not possess a distinct membrane. From certain staining reactions it appears that the substance forming the nucleus resembles in its chemical reactions the nucleolus of the invaded cell, though there are certain points of difference between them. Around the nucleus the protoplasm is condensed (?) and from this centre extremely fine, delicate rays often extend to the periphery of the organism. One might then think that the parasite consisted of the nucleus and central mass of protoplasm, furnished with long pseudopodia; but careful observation shows that these rays terminate at the periphery, and are continuous with the rounded outline of the parasite.

ADENOIDS IN THE NASO-PHARYNX IN CHILDREN.[1]

By T. H. HALSTED, M.D.,

AURIST AND LARYNGOLOGIST TO FREE DISPENSARY, SYRACUSE, N. Y.

MR. PRESIDENT AND GENTLEMEN: There are few subjects of equal importance which are less discussed than this of post-nasal growths in children. There are few diseases so easily diagnosed, the early recognition and treatment of which would prevent so much subsequent trouble. If the statement be true that adenoid growths in children is by far the greatest cause of middle-ear disease and deafness (in children), the importance of diagnosing and treating this condition before it has worked irreparable mischief will be admitted. It has been the misfortune of otology that the ear has been viewed too much through the aural and too little through the nasal speculum and rhinoscopic mirror.

Czermak, in 1860, without appreciating his discovery, was the first to see in the naso-pharynx two small vegetations. In 1865 Lowenberg and Voltolini each saw these vegetations in a few cases of middle ear disease, and believed them to be the cause of the middle ear diseases with which they were associated. It was not, however, until Meyer, of Copenhagen, in 1868, had published his paper, based on one hundred and seventy-one cases of adenoid growths which he had found in school children, that the attention of the profession was at all directed to this newly discovered disease. That even otologists did not fully appreciate the relationship between middle-ear disease and adenoids is seen by the very scant reference to it in text-books of the ear, published prior to the past six or seven years. In the last edition of "Burnett on the Ear," published in 1884, and consisting of 576 pages, less than one is devoted to this subject. An excellent little work on the ear, by Pritchard, published last year, and consisting of only 210 pages, gives 7 of them to this disease. Cohen, in his book on the "Nose and Throat," published in 1879, gives 11 of the 711 pages to this subject, while Bosworth in his last work devotes one-twentieth of the whole book to adenoids, or, as he prefers, "Hypertrophy of the Pharyngeal Tonsil."

The term "adenoids" is the one most frequently employed, but is inferior to that of "hypertrophy of the pharyngeal tonsil," as the latter name at once conveys the conception of the true pathological condition. The vault and posterior wall of the naso pharynx are more or less covered with a glandular or lymph tissue, similar to the faucial tonsils, and called the pharyngeal, third, or Luschka's tonsil, after Luschka, who first described it. The main function of this, as of other tonsils, Lenox Browne says, is "probably that of the manufacturing of leucocytes to act as phagocytes or scavengers for the clearing away of food débris and for the holding in check of micro-organisms in the upper respiratory and alimentary tract;" while Bosworth thinks the chief function is the secretion of mucus for the purpose of lubricating the food to make its downward passage easy, the mucus being constantly secreted and passing to the lower pharynx, where it comes in contact with the food. The microscopical appearance of a section of these so-called adenoids shows them to be a true hypertrophy of the lymph tissue, *i.e.*, of the normal pharyngeal tonsil, very analogous to that of an enlarged faucial tonsil, the latter differing only in its greater amount of connective fibrous tissue. The reason of the enlarged faucial tonsil being firmer and containing more fibrous tissue is because of its location in the food tract, where it is subject to almost constant irritation and pressure. Just as in the fauces we see enlarged tonsils of different degrees, some only slightly enlarged, then again others so large as to meet in the centre and shut off the view of the pharynx, in the same way do we see adenoids of different degrees of enlargement. They may be slight and apparently of no injury, or they may be so large as to fill the whole post-nasal space. It is when they become sufficiently enlarged as to interfere with nasal respiration or by their position occlude the Eustachian orifice that they become of pathological importance calling for treatment.

During the past three months I have carefully examined 268 children to ascertain how many of them had this condition of adenoids sufficient to cause mouth-breathing. These children were from five to fifteen years of age, and all institution children; 116 were of the State Institution for Feeble-Minded Children; 154 belonged to the Onondaga County Orphan Asylum. As a class they are more predisposed to glandular or lymphatic disease than other children, and the percentage of cases of adenoids found among them is doubtless much greater than we would ordinarily meet with—possibly as large again. In all I examined the nose, mouth, pharynx, and naso-pharynx, using the rhinoscopic mirror in the latter, and noted the conditions found. The night attendants then observed the children while asleep, and reported on each one separately as to whether or not it slept with open mouth, snored, etc. I then compared their reports with my examination, and give the result in the following table:

REPORT.

Asylum for Feeble-Minded Children.

Number of children examined, 114.

Boys	61.	Ages 5 to 10 = 45
Girls	53.	Ages 10 to 15 = 69

Number with adenoids sufficient to cause mouth-breathing, 23, or 20.1 per cent.

Boys	10.	Ages 5 to 10 = 9
Girls	13.	Ages 10 to 15 = 14

Onondaga County Orphan Asylum.

Number of children examined, 154.

Boys	95.	Ages 5 to 10 = 103
Girls	59.	Ages 10 to 15 = 51

Number with adenoids sufficient to cause mouth-breathing, 40, or twenty-six per cent.

Boys	29.	Ages 5 to 10 = 31
Girls	11.	Ages 10 to 15 = 9

Total number children examined, 268. Total number children with adenoids, 63, or 23.7 per cent.; associated with enlarged tonsils, 32, or fifty per cent.; with some anterior nasal obstruction, 29, or forty-six per cent.

Heredity as a predisposing cause is, I think, a potent factor in the development of these growths—not an hereditary predisposition to adenoids particularly, but of an inherited tendency to all glandular inflammations. The acute attacks do not fully resolve; there is a strong tendency for the condition to become subacute, and then chronic. It is in these children that we are likely to find enlarged submaxillary and cervical glands. They are to a great extent of a diathesis which, for want of a better name, we call strumous. This is shown very well in the result of my examinations, as the class of children, as a whole, would be said to be largely strumous, and among them we find more than twenty per cent. showing chronic enlargement of the pharyngeal tonsil.

Age is another predisposing cause, because in children the lymphatic glandular tonsillar system is the one most prone to inflammation. As a rule, when a child has a cold in the head it takes the form of an acute naso-pharyngitis, instead of, as in adults, an acute rhinitis. Probably from three to ten is the period most likely for the development of the growths. Undoubtedly they occur much earlier, and just how early they may begin we cannot know. I recently operated on a child, for this disease, twenty-two months of age. They occur less frequently after puberty, though they are often found as late as between thirty and forty years, and even later. A great many direct causes are given in all text-books, but simmered down they are two, viz., repeated acute inflammations, and some obstruction in the nose. As causes of the acute inflammation are climate, such as ours, the ex-

[1] Read before the Onondaga County Medical Society, Syracuse, N. Y., April 19, 1892.

anthemata, whooping-cough, diphtheria, etc. Of my 63 cases some anterior obstruction was found in 32; of the 40 cases at the Orphan Asylum, 18 showed some form of obstruction, an hypertrophy of the turbinateds, deviations or thickenings of the septum, or a depressed tip; of the 23 cases at the Idiot Asylum, 11 showed the same kind of obstruction, but in nearly all of them was there a very narrow and high-arched palate, which acted by raising the floor of the nose, and to that extent diminishing the respiratory capacity of the nasal cavity. In none of these was the obstruction sufficient to prevent nasal respiration, but enough to impair it to a greater or less extent. MacDonald explains the *rationale* of the production of adenoids as a result of some anterior hypertrophy in this way: that where there is an obstacle causing some stenosis in the nose, and where nasal respiration goes on, the barometric pressure behind the obstruction is diminished, an overfilling of the blood-vessels results, and it in its turn —through vaso-motor disturbance—leads to hypernutrition and hypertrophy of the tissues behind the obstruction, and in this way is hypertrophy of the pharyngeal tonsil produced.

The nose is the organ of smell and the beginning of the respiratory tract. In normal respiration the inspired air in passing through the nose becomes filtered of particles of dust, etc., is completely saturated with moisture, and is heated to a temperature of about 95° F., no matter what the external temperature of the air. There is as well an exchange of oxygen and carbonic acid gases. These respiratory functions of the nose at once demonstrate the great importance of breathing through this organ. There is, however, one other extremely important purpose of nasal respiration—I mean ventilation of the middle ear. The Eustachian orifice in the naso-pharynx is just behind the posterior end of the inferior turbinated body, and in the direct current of respired air. In inspiration the air must reach the larynx either by the nose or mouth. Obstruction to nasal breathing must be above the pharynx as seen from the mouth, *i.e.*, either within the nose or naso pharynx. In children it is almost always within the naso pharynx, in adults within the nose. In proportion to the extent of the obstruction, mouth-breathing becomes a necessity. Mouth-breathing is never a habit, but a result and a symptom of nasal or post-nasal obstruction, and as a sequel of a long continuance of it we would expect to find, and usually do find, either a chronic pharyngitis, laryngitis, or tracheitis in the respiratory tract, or a chronic catarrh of the middle ear, or indeed all of these conditions combined.

The expression and voice of children the subjects of adenoids are so characteristic that one is almost safe in making a correct diagnosis on these two symptoms alone. The mouth is open, the lower jaw appears to drop, the lips are thick and expressionless, the root of the nose is broadened, giving to the eyes an appearance as if unusually wide apart; add to this the somewhat stupid expression that would go with such an appearance, but which is enhanced by the almost invariable defect in hearing that accompanies these cases, and you have an expression typical of adenoids. Examined more closely there is a depression on each ala of the nose, the nostrils are often small and narrow, making the bridge look unusually broad. This expression might lead one to think that among a certain percentage of feeble-minded children these growths stood in a relation of cause and effect, and it was with a view to seeing how true this was that I began my examination at the Idiot Asylum. So far as they go, my examinations showed that adenoids were not more prevalent among the Idiot Asylum children than those of the Orphan Asylum Whether adenoids can, excepting in very exceptional cases, be the cause of the weak mental condition found in what are known as feeble-minded children, is doubtful. Certainly the removal of these growths in a child said to be dull or slow very frequently produces a wonderful effect in changing it from a dull to a bright child. The speech is of a quality the Germans call "dead"—a thickness in which there is an impairment or entire lack of nasal resonance. The function of the vault of the pharynx as a sounding-board is abolished or much interfered with. The child may turn his m's and n's dependent upon the nose into b and d. The voice is peculiar and is quite different from that of enlarged tonsils or of a simple nasal stenosis. Snoring during sleep is a prominent symptom. It is not by any means always present.

As MacDonald says, the instinct of nasal respiration while asleep is so strong that children the subject of it only breathe through their mouths when absolutely compelled to. The following case illustrates this: The mother of A. B—— consulted me on account of the difficult breathing of the child while asleep. The patient, aged four years, was asleep about half an hour when I first saw her. Her forehead was bathed in perspiration, face deeply flushed, lips almost cyanotic, breathing so labored that epigastric recession was marked, her mouth was covered with a frothy saliva which was sucked in and out with each respiration through her teeth, which were closed. The dyspnœa was as great as that of many cases of croup. I found that on separating the teeth with a lead-pencil the dyspnœa was immediately relieved, and snoring began. This child, for over two years, would every night during the first half-hour or so of sleep breathe as I have described; she would finally turn over, or wake up and open the mouth and continue her sleep with mouth-breathing, and snore for the rest or greater part of the night. Not much wonder the child was pale, anæmic, and languid, easily tired out during the daytime. In a few days I removed the adenoids which were present, with the result that within three nights after the operation the child slept with closed mouth as quietly and easily as any child could. It is now four months since the operation, and during this time the child has not had a restless night. In this case there has been absolutely no other treatment since the operation. Snoring, noisy respiration with open mouth, or restlessness during sleep occurs in those cases where the adenoids are large enough to be an obstruction. One of these cases at the Idiot Asylum snored with its mouth closed, an unusual but not rare circumstance in children with adenoids. Other symptoms present in most cases are a large amount of muco-purulent discharge at the back of the pharynx, a good deal through the anterior nares, with an inability to blow the nose, pain over the brow, and a want of ability to concentrate the attention for any length of time. The most important symptom of all is the one most often overlooked. This is some degree of hard hearing, and it is frequently not until there is a discharge from the ear or the deafness is marked that the patient comes under our observation. For the proper performance of the ear, the middle-ear must be freely ventilated, and the membranum tympani have an equal air-pressure on both sides. If from any cause the external pressure exceed the internal, the membrane is driven in, it cannot vibrate properly, and a degree of impairment of hearing must result. In order that the ear be properly ventilated, respiration must be through the nose, otherwise the air in the naso-pharynx and middle-ear becomes, as it were, stagnant, an absorption of oxygen takes place from the air in the middle-ear, the air is rarefied, *i.e.*, the barometric pressure lowered, and to overcome this partial state of vacuum there is a rush of blood with an over-distention of the vessels in the mucous membrane lining the cavity. If long continued, this hyperæmia becomes chronic, and in time leads to a structural hypertrophy, and we have a chronic hypertrophic condition of the Eustachian tube and middle-ear, with which is the indrawn membranum tympani; with this there is a degree of deafness dependent upon the extent of the ear change. This explanation of adenoids causing middle-ear disease is, I believe, the true one in most cases; but there are two other ways in which they may give rise to the same result, viz., by their presence interfering with the free action of the dilator muscles of the Eustachian

tube, and by their situation directly occluding or pressing upon the orifice. This latter is the explanation usually given; but I believe it to be the exception, because it is the exception to find the growths directly impinging upon the orifice. They are often so situated, and when so would account for those cases of otitis media due to adenoids where the growths are not large enough to be an obstruction to respiration. This symptom of deafness or hard hearing is not always manifest to either patient or parent. It is seldom, in those cases where the parent is positive there is no hardness of hearing, that you fail to elicit the statement that the child is inattentive both at home and at school. On questioning he may give a history of repeated earaches. Recently a father insisted that his boy heard perfectly, being only a little absent-minded or inattentive, but a test of hearing showed that he heard with the watch with one ear ten feet, with the other eleven inches. The membranum tympani was markedly retracted on the bad side. As to the frequency of middle-ear disease in adenoids, Meyer found seventy-four per cent. of his cases had some demonstrable degree of hard hearing or deafness. Woakes says ninety-five per cent. of his cases had middle-ear disease. Undoubtedly a very large per cent. show ear trouble, varying from a slight beginning catarrh to a suppurative otitis media with necrosis of the bones and formation of polypi. On the other hand, the majority of middle-ear cases in children show the presence of adenoids. Owing to the nature of my cases and lack of time, I was unable to make any accurate examination with regard to ear complications.

There are two ways of examining the naso-pharynx for these growths. The best is with the rhinoscopic mirror. Nearly all text-books insist on the impracticability of this because of the patients being children. I was enabled to satisfactorily examine over eighty-five per cent. of my two hundred and sixty-eight examinations with the mirror, and think patience, perseverance, and getting the child's confidence will work wonders in overcoming gagging and retraction of the soft palate. As seen by the mirror they are of varying appearances, according to their size and location. Usually of a pale pink or grayish pink color, or at times dark red, they are seen to project from the posterior and upper surface of the space like a cushion, that is dented in, or furrowed longitudinally, forming two to five or six lobes. Again, they may so completely fill the naso-pharynx that the usual landmarks of the choanæ are lost, and apparently one sees only an irregular pale mucous membrane without any shape or form of a tumor. At times they hang from the vault extending across it like a cock's comb, or they form a fringe around the Eustachian orifice and fill up Rosemüller's fossa. They may extend so low as to be seen below the soft palate and require only the tongue-depressor to make out the lower portion.

The other method of examining is by the finger. Standing behind and to the patient's right, the left forefinger, protected, is inserted between the jaws of the left side as a gag, and the right forefinger is carefully passed back of the right tonsil, turned upward along the posterior wall of the pharynx behind the velum palati. The sense of touch imparted is characteristic, being described as feeling as if the finger were among earthworms, or it is not altogether unlike the sensation produced by sticking the finger into mush. By this examination we can determine the size and location of the growths. It is disagreeable, suffocative, but need not be painful to the patient. A little blood usually comes away on the finger. In most of my sixty-three cases, a condition of follicular pharyngitis was present. The follicles are enlarged, pale pink, look sluggish, and are practically of the same nature as the adenoids, and not to be confounded with the granular pharyngitis of adults. Enlarged tonsils are not always present with these post-nasal growths, but I doubt if adenoids are not nearly always present where we find enlarged tonsils. What was formerly attributed to enlarged tonsils, such as faulty nutrition, pigeon breast, stupid facial expression, etc., is now usually conceded to be the result of the presence of adenoids in the naso-pharynx. In my sixty-three cases, enlarged tonsils were present in over fifty per cent. They are the result and not the cause of adenoids, and as an explanation would suggest that a continual mouth-breathing would predispose anyone to acute tonsillitis, and more particularly those children who are already predisposed to glandular and tonsillar inflammations. Repeated attacks soon leave a subacute and chronic condition with a subsequent permanent enlargement. As indicated, in speaking of the etiology in most cases we find some trouble in the nose. In a number I found the sole anterior trouble a sunken, depressed tip, obliterating, to a certain extent, the nostrils. The other obstructions were deviations and thickenings of the septum, enlarged inferior turbinated, and high arched palate. If left to themselves they are said to undergo atrophy after puberty, and for this reason some men advise leaving them alone. Doubtless they do become smaller, but the naso-pharynx becomes larger at about this period, and the seeming decrease in size of the adenoids is often more apparent than real. Patients do not come to us to be treated for post-nasal growths, but for some symptoms or pathological conditions produced by them, and in these cases an active treatment is necessary. The prognosis is then good, both as regards removal of the growths and of the conditions produced by them. If left alone they may shrink as years advance; but while they are undergoing a "spontaneous recovery," the ear may suffer an active change too, and deafness result from this expectant treatment.

Treatment.—Not all cases require treatment, but those do which cause mouth-breathing, or middle-ear disease. There are three methods of treatment—the local application of caustics and astringents, the galvano-cautery, and the surgical removal. Chemical caustics and astringents are very unsatisfactory and are of little avail. Where surgical means are not permitted by the patient, the galvano-cautery is much preferable to chemical caustics, as chromic and tri-chloracetic acids. An electrode, properly curved, is introduced into the naso-pharynx under the guidance of the mirror, and several points cauterized. A number of sittings are necessary. Cocaine does not completely anæsthetize, and it is in very exceptional cases that one would use the galvano-cautery. I cannot see how it could be used with small children. By far the best treatment is the surgical removal, and all who have had much experience are agreed in this. Many different kinds of forceps, curettes, and snares have been devised. A few use the snare introduced through the nose, or, as Bosworth does, through the mouth. For practical purposes it is far inferior to cutting instruments. The instrument which I use and prefer is Juracz's modification of Lowenberg's forceps. It consists of a cutting forceps, properly curved to be introduced through the mouth into the naso-pharynx, and has a lateral movement, the posterior and upper surface of the inner side of each blade having a cutting edge to meet its fellow, the anterior edge being non-cutting and concave, to prevent injury to the septum or soft palate. In children, but not in adults, I think a general anæsthetic necessary, and I give ether. The operation, though short, is a painful one, and better and more thorough work can be done than where the child is fighting you. With the child on its back, a proper gag, such as O'Dwyer's, well back between the jaws of the left side, the operator standing on the right, the left forefinger is introduced back of the soft palate, to act as a guide for the forceps, which are introduced with the right hand. The adenoids are removed in pieces, from three to six introductions of the instrument usually being required. After the forceps has removed all it can, it is well to introduce the forefinger and with the nail tear away any small pieces that may remain about the Eustachian orifice, or in Rosemüller's fossa. The hemorrhage following is quite copious and sharp, but lasts but a few minutes, and the mouth and pharynx sponged, the child turned on its side and face, the blood escaping through the nose and mouth, there is little danger

of its reaching the larynx. In a certain number of the flat variety, the forceps does not answer, and here a curette, such as Gottstein's, becomes necessary. When this instrument is used, the patient sits upright, cocaine is used as an anæsthetic, and the operation done under a good light. In any of these operations, wounding of the Eustachian orifice, fracturing of the vomer, or stripping the mucous membrane from the soft palate, are to be avoided. Fortunately, as a general thing, no further treatment is necessary beyond the use of an alkaline antiseptic spray for about a week, the result being after three or four days a striking and marked improvement, and relief of all signs of obstruction. In those cases, however, in which there is some anterior nasal obstruction which may have had a good deal to do with the causation of the adenoids, the treatment will not be entirely successful until its removal.

LACERATION OF THE PERINEUM: ITS EFFECTS AND CAUSES.[1]

By S. M. VORIS, M.D.,

COLUMBUS, IND.

It is not my purpose on this occasion to endeavor to present a detailed consideration of perineal lacerations after the manner laid down by authorities; neither is it my purpose to try to coincide with or claim the support of authorities. Consequently, in offering what I do for present discussion, and the test of future observation, I do not challenge discussion based on your knowledge of the books, but I do appeal to your own practical observation guided by natural law, common sense, and reason. To begin, I feel confident that it is only necessary to appeal to your every-day experience to establish the fact that lacerations of the perineum are humiliatingly frequent. While we sometimes hear physicians boast of having never had perineal rupture under their care, we frequently know, as a matter of fact, that they are either guilty of gross carelessness in not knowing, or grosser deception in trying to conceal, the existence of a laceration.

Whatever statistics might reveal, if they could be correctly gathered, it is sufficient for us to know that, in our every-day duties as physicians, we meet with a sufficient number of women dragging through a weary existence as a result of old cicatrized lacerations and their resultant evils, and a sufficient number of new ones occurring to help us to realize that they stand out as a sad commentary on the boasted skill of modern midwifery.

The usual evil results which may follow this accident, immediately or remotely, as given by the books, are prolapsus vaginæ, with cystocele or rectocele, prolapsus uteri, incontinence of fæces and intestinal gases, and cervical metritis, etc. Of course, these evils vary in frequency and extent according to the extent and character of laceration.

While authorities have hitherto agreed that the limited lacerations are followed by little or no inconvenience, it seems more consistent with my observation that some of the most reputable teachers of the present day are beginning to emphasize the point, that any extent of lacerated and cicatrized perineal surface exerts a direct influence upon the sympathetic nervous system, which is more prolific of evil even than lacerations of the cervix-uteri.

As we now come to the consideration of the causes of this accident, it is my purpose to mention some of those only which operate in connection with the parturient act. And these are mentioned not to invite discussion on this occasion, but for easy reference in connection with a cause I shall endeavor to demonstrate further on. Not that I would detract from the value of the causes as presented to us by authorities, but that I may be able to emphasize the special object or purpose of this paper.

We are taught that the accident may arise from a deviation from the ordinary mechanism of labor—from mal-conformation of the passage or soft parts, from malpresentation or mismanagement. 1. If the sacrum be too perpendicular, the head of the child, instead of receiving a direction anteriorly in the line of the axis of the lower outlet, will be forced downward upon the posterior portion of the perineum. 2. If the subpubic arch is so acute as to prevent the presenting portion from filling its upper part, etc.

I doubt not in the experience of many of you there have occurred perineal ruptures where there appeared to be no perceptible deviation from the normal mechanism whatever, and when it was a difficult problem to determine why such laceration should occur at all. In the solution of this problem I wish to call attention to a hitherto unrecognized force, or indirect influence, manifested in the mechanism of labor, which I believe is responsible indirectly for more lacerations of the perineum than all other causes combined, operating in connection with the parturient act.

The mechanism of labor is defined to be "a combination of movements founded upon the principle of adaptation, and intended, through the proper adjustment of the respective diameters of the fœtus to those of the pelvis, to facilitate the passage of the former into the world."

These movements are usually given as four—by some authorities five, viz.: flexion, descent, rotation, and extension, with sometimes external rotation or restitution.

We will consider, for the purpose of illustration, this combination of forces and movements as they are manifested in an ordinary natural labor, in the first vertex position.

In this position the occiput, or the posterior fontanel, corresponds to the left acetabulum. Under the influence of the uterine contractions transmitted through the spinal column, the occiput advances and the chin is thereby brought in close approximation with the sternum, constituting the movement of flexion. You will please note the fact that this movement is explained by the fact that the articulation of the spinal-column with the head takes place considerably posterior to the centre of head; consequently flexion takes place in obedience to a very natural law—easily comprehended.

In obedience to the continued contractions of the uterus the head now descends into the pelvic cavity, adapting itself to the course of least resistance, and, influenced by the inclined planes, the occiput is brought to a position corresponding to the symphysis pubis and the face in the concavity of the sacrum. This constitutes the movements of descent and rotation.

We have now come to the movement in the mechanism of labor which has a special significance in the purpose of this paper.

We are told that from its peculiar position at the lower strait after rotation is effected, the posterior surface of the child's neck is brought closely against the symphysis pubis, which becomes a point of resistance, so that the force of the uterine effort, which until this time had fallen on the occiput, is now concentrated on the chin, which causes it to leave the sternum and sweep over the perineum, thus completing the movement of extension and the second stage of labor

I have tried to quote in substance the usual description of these movements. The movement of extension is usually passed over with very few words, signifying that it is simple and easily understood; and some prominent teachers of the present day ignore it entirely, disposing of it along with rotation by stating simply that the head seeks the course of least resistance, etc.

Now, right here I will state emphatically that I have never accepted the philosophy of extension as taught by the books, for the simple reason that it does not appear consistent with natural law, nor with common sense and reason. I do not believe that the force of the uterine contractions, as conveyed to the head through the spinal

[1] Read before the Indiana State Medical Association.

column, is the real cause or has anything immediately to do with the movement of extension. Consider for a moment: The atloaxoid articulation is pressed closely against the point of resistance, the sub-pubic arch. The occiput is comparatively free, but the frontal region and chin, the most distant parts from what is considered the point of resistance, are expected, in obedience to a force received almost exactly at that same fixed axis, to revolve around that axis, notwithstanding the resistance that we know by experience is presented by the perineum. It seems to me to be expecting too much of human credulity. I am firmly convinced that here, in this movement, is to be found the key to the secret of the greatest danger to the integrity of the perineum.

The question then naturally arises: What is the true philosophy of the movement of extension? and how does it affect the perineum?

In endeavoring to demonstrate to you what I conceive to be the true philosophy of extension, I shall begin by appealing to an old and long-accepted natural law, which I believe has never been repealed, namely: Action and reaction are equal and opposite. We are told that when the uterus contracts there is a shortening of its longitudinal fibres. Now, in the beginning of this stage of labor, when the os uteri is undergoing dilatation, it furnishes a certain amount of resistance, which, together with the resistance of the head against the circumference of the superior strait, compensates the force exerted by the contracting uterus. But when the uterine contractions have forced the head down into the pelvic cavity, it has at the same time, by shortening of its longitudinal fibres, retracted the rim of the os over the head. Consequently, at the beginning and during the movement of extension, in the absence of the resisting os, the reaction or purchase must necessarily come from the tension of the vagina, and finally from the resistance of the perineum as conveyed through the vagina.

There is no other connection of force between the uterus and perineum except through the walls of the vagina, consequently, when the head is resting against the perineum, and the uterus by its contractions shortens its longitudinal fibres, and thereby shortens its connection with the perineum, the latter must necessarily furnish the resistance, or the uterus would recoil; for action and reaction are equal, and the uterus has no other stay except the broad ligaments and abdominal pressure, which may have little or no influence whatever.

Now, at the beginning of the movement of extension, when the posterior surface of the neck is in contact with the subpubic arch, the shoulders resting behind the arch, and the head is pressing on the perineum, the shortening of the longitudinal fibres of the uterus, instead of forcing the body of the fœtus down, fails to overcome the resistance of the shoulders and neck against the arch, and consequently the vagina and perineum become the movable points, and are retracted over the head just as the os uteri was in the first part of this stage of labor.

When the inclined plane of the perineum formed by the curved posterior columns of the vagina becomes tense, through the contraction of the uterus on the one hand, and the resistance of the perineum on the other, the head does not, or it should not, advance, but is forced toward the symphysis pubis, while at the same time the perineum is pulled back over the head, constituting the movement of extension without excessive distention of the perineum. During this movement the quieter the body of the fœtus remains, the greater is the safety of the perineum. Then the shoulders change position, and the second stage of labor is completed.

Owing to the peculiar anatomical construction of the vulva the tension caused by the fœtal head falls entirely on the posterior commissure, the resistance anteriorly being furnished by the subpubic arch. In the latter months of gestation the integument is sometimes so tense over the abdomen that the vulva is drawn up over the symphysis, bringing the vaginal orifice and posterior commissure closely beneath the arch, thus serving as another element in the resistance of the perineum.

In the light of this philosophy of the movement of extension it follows as a natural sequence that any cause operating against the proper tension of the posterior columns of the vagina will seriously interfere with the perfect extension of the head, and any cause interfering with extension will seriously endanger the integrity of the perineum.

An unyielding or rigid os may cause the uterus to be forced down into the pelvis by the abdominal tenesmus, before the head is relieved of its resistance, and the rim of the os or anterior columns of the vagina so retained between the head and subpubic arch as seriously to interfere with the proper tension of the posterior columns of the vagina.

A perpendicular sacrum, spoken of by authorities, rendering the central curved line of the pelvic excavation more obtuse, tends to relax the posterior wall of the vagina and allow the tension to fall upon the anterior wall.

Neuralgic or false labor pains attended with the expulsive effort, sometimes produce an effect similar to that of a rigid os. Ergot, by exciting the circular out of proportion to the longitudinal fibres of the uterus, and by the continued and unremitting character of the contractions produced, tends to an unsafe labor.

These causes, and probably others, operating singly or combined, may render an auspicious termination of labor extremely doubtful. And while it may not always be possible to determine the cause, it is sufficient for me to repeat that it is my firm conviction that any cause which may prevent the posterior columns of the vagina and the perineum from receiving the tension caused by the contractions of the uterine longitudinal fibres, will allow the head to descend upon the back part of the perineum in a flexed or partially extended condition, which, in the absence of the support and influence of the tense inclined plane, formed by the posterior wall of the vagina, gives way before the descending head and pouching back of the sphincter vaginæ, and renders a perfect and safe extension almost impossible.

When approaching this point in the second stage of labor, if I find the posterior columns of the vagina tense, and the posterior commissure well drawn back, probably as far as the anterior fontanel, in the first position, I feel comparatively content to allow labor to proceed without interference. But if the vaginal orifice is drawn up more or less closely beneath the subpubic arch, and the walls of the vagina are lax and corrugated in front of the descending head, I immediately place the patient on her left side, with the thighs well flexed upon the abdomen and the shoulders forward, in what is tantamount to the Sims position. This tends to throw the fundus forward and change the planes and axes in a way that renders the vaginal curve more acute; then sitting with the left side to the back of the patient, supporting the knees against the abdomen with the left hand, I place the right open palm over the perineum and posterior commissure, not only in obedience to the time-honored injunction to "support the perineum," but to assist in retracting the perineum; for the perineum must retract, and that, too, before the head is forced down, or mischief is liable to be the result.

The first examination after the change of position will usually reveal a decided change in the condition of the perineum. Should this procedure fail, I then resort to forceps, but not for the purpose of traction. I apply them with the handles well back against the commissure, then, with the right hand making sufficient pressure to prevent the instrument slipping, and with the left open palm applied firmly over the perineum, I simply raise the head toward the symphysis, at same time pressing the commissure back over the head.

Of course, circumstances and conditions may change or affect the feasibility of these procedures, but these are sufficient to indicate the idea I wish to convey.

DANGERS OF INTESTINAL INVAGINATION SUBSEQUENT TO OPERATION.

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INTESTINAL surgery is about the most dangerous and disastrous of all surgery. The reason is not far to seek, for the danger lies in the fact that all repair to the digestive tract must be done while its function actively resists. We have no means of putting the mucous membrane to an anatomical or physiological rest. It refuses to indulge in a furlough while its defects undergo repair. Not only that, but when it is in need of repair its very vitality at the seat of defect is lessened, and violent peristalsis in the proximal bowel enhances the dangers by further crippling the circulation and assimilation in the attacked segment. Repairing a gut is like repairing a watch while it is running. One is thwarted from beginning to end by persistent movement and function.

A well-known skilful English surgeon told me personally that he had killed grave-yards full of *people* (instead of dogs) in order to learn how to do intestinal surgery. I fully believed him, for during my visit to him he was still filling graves from defective intestinal surgery. Yet I can assure the reader that this very surgeon's name is the synonym of skill, but he happened to be working in a field where disasters occur. In giving practical intestinal courses to abdominal surgeons from various States, I have a good opportunity to note effects and defects of intestinal operations on living dogs. Surgeons will come for a course who have done some thirty consecutive laparotomies without a death, and they will do six to eight intestinal operations on living dogs, and occasionally half the dogs will die inside of a week.

Such proofs, with the experience of some two hundred and twenty-five intestinal operations on dogs, with the careful personal observation in almost every case of the autopsy, has well convinced me that intestinal surgery is about the most difficult in the whole art. Among the defects which I have noted for four years in the experimental work has been that of *invagination* subsequent to operation. Invagination of the bowel is the passing of a segment of the gut into that immediately adjacent to it. It is caused by irregular action of the muscles in the gut-wall. Invagination is a disease of childhood, and especially is it a disease of those patients whose cranial brain is defective and has lost effective control over the abdominal brain (the semilunar ganglia). Twenty-five per cent. of invaginations occur in children under one year, and fifty per cent. occur in children under ten years. We may expect invagination when the abdominal brain or its conducting cords are injured or defective.

The ideal of a nervous system is: 1, a ganglion; 2, a conducting cord, and 3, a periphery. An injury or defect of any one of the above three paves the way for invagination. Invagination is liable to follow any operation which has required complete severing of the gut, as that injures the conducting cord and periphery of the abdominal brain or semilunar ganglion. Hence we must learn to avoid invagination in circular enterorrhaphy, Jobert's operation with all its modifications, the stove pipe joint operation which I have introduced and performed many times successfully, and, in short, in all operations where the gut is entirely cut into two parts. For some three years I have talked and written about invagination subsequent to intestinal operations, but I have never heard or seen a single comment on it. It is apparently as if it had never happened or been published. But I think I lost about eight dogs in two hundred and twenty-five from this kind of invagination. It happens in this wise: A bowel is completely severed and its ends are invaginated for, say one quarter of an inch to one inch, and then it is fixed in this position by four to six Lembert sutures. A graft is applied and fixed in location by a few sutures. In a few days or a few weeks this invaginated bowel simply continues to invaginate until it interferes partially or completely with the fecal current.

Invagination subsequent to operation is liable to follow in circular enterorrhaphy, in Jobert's operation, and, last but least, in lateral anastomosis by plates. In this article I present the cut of a specimen taken from a dog which died ten weeks after an operation for lateral anastomosis. The gut was completely severed and invaginated one-quarter of an inch, and sutured in position by four Lembert sutures. The lateral anastomosis was performed with my segmented rubber-plates, and graft applied by fixation sutures.

The dog died from pure marasmus in ten weeks, caused by the distal cut end of the bowel continuing to invaginate until the invaginated segment interfered with the fecal current fatally.

The proximal end of the gut was much thickened and dilated. Its pathology showed a chronic process. The dog was a mere skeleton, a dime museum cage of bones. He had spells of vomiting, and many days at a time he refused to eat.

The autopsy showed all else normal. The invaginated segment was composed of the distal end above the anastomosis. The purpose of the operation of lateral anastomosis on this dog was to prove that a bimucous fistula will gradually close to a dangerous degree. I was going to keep the dog a year, but his premature death confirmed and proved what I had observed for three years in experimental work, viz., that invagination subsequent to complete severing of the gut will occur in about four per cent. of cases.

The first question to ask is, Is a dog's gut and a man's gut comparable as to operation? If a man's gut is like a dog's gut, then operative proceedings will be alike for both. So far as I can judge, a dog's gut is distinctly and properly comparable in operative procedures to a man's gut, therefore, operations performed on either will be accompanied by similar results. I have examined carefully a great many digestive tracts of both man and dog, and I know that the muscular wall of a dog's gut is a little thicker than a man's gut-wall. Also, there is a thicker aponeurosis or fibrous sheath in a dog's gut wall than there is in a man's gut wall. But I do not think that there will be any material different results in operative procedures.

The second question to ask is, How are we to avoid invagination subsequent to operation on the gut?

After invagination had occurred subsequent to circular enterorrhaphy, I began to use a rubber band or ring, but that did not prevent subsequent invagination. The dogs died from the invagination just as much with a rubber ring or band as without them. I worked some six months on plans, and finally I began to use the rubber tube from four to eight inches long. This rubber tube, adapted to the size of the bowel, was stitched into the segment of the gut when the circular enterorrhaphy was per-

formed. The tube was made to project three quarters up into the proximal gut. The tube, by distinct methods of stitching, could be made to remain in the bowel from three to eight days, as desired. With this rubber tube I do not now remember to have had one death from invagination subsequent to operation until the case reported in this communication. Hence the rubber tube six to eight inches long, adapted to the size of the gut, is the most effective remedy against invagination of the bowel subsequent to intestinal operations. The tube must not fit the bowel too tightly, or it will produce gangrene. But in invagination following lateral anastomosis, as in the present case, more trials will bring light, no doubt. Of course I can very distinctly warn the intestinal operator that the less gut end he invaginates before fixing by sutures the better. I have had gut ends continue to invaginate about fifteen to twenty times in two hundred and twenty-five operations, but the invagination did not appear to do any harm. But the dogs were killed too early to speak of what final results would be. I now try to invaginate between one-eighth and one-fourth of an inch of gut.

Another view I have obtained from experience is, that the lateral anastomosis should be done as near the end of the closed gut as possible; for then the short muscles of the distal gut end will probably not be able to get sufficient start or purchase power to continue the invagination.

The final suggestion that I have to remedy the invagination subsequent to lateral anastomosis will, I think, be effective. It is to stitch the end of the distal gut to the side of the proximal bowel. This, I think, will effectually check any further invagination. It should be done with two lateral and one middle Lembert sutures. For fear that the end of the proximal bowel might take a capricious notion to invaginate, it should also be stitched to the distal bowel by three Lembert sutures. Something may be done to prevent invagination by various methods of shortening the mesentery by reefs and tucks. But in my experience the mesentery so elongates by slow stretching that it is not wholly reliable.

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CASE OF TRAUMATIC IRIDO-CHOROIDITIS FROM CONTUSION OF THE EYEBALL, ENDING IN THE DEVELOPMENT OF INTRA-OCULAR GLIOMA.[1]

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Maggie P——, aged three, was first seen on December 9, 1890, and the father gave the following history: On November 28th, while seated at the dinner-table, the child was struck a severe blow on the left eye by a large table-spoon in the hands of an older child. The convexity of the bowl of the spoon struck the eye. The child immediately cried out and complained bitterly of the pain. The eye was bathed with cold water by the mother, and after a while the child stopped crying and complained that she could not see. The lids remained swollen for nearly a week, and there was some discharge of a muco-purulent character. On December 9th, when I first saw the child, the swelling of the lids and the discharge had entirely ceased, but the eye was apparently sightless. There was a central infiltration of the cornea with loss of the epithelium; a dilated, discolored, and immovable iris, marked ciliary injection, and a slightly hazy vitreous. With the ophthalmoscope there was a distinct yellowish reflection from the nasal half of the fundus, which was most marked in the supero-nasal quadrant, and seemed to be due to an exudation with vessels running over it. The refraction of this part of the fundus was + D. 1. The child complained of no pain and the eye was not sensitive on pressure. The other eye was normal in every respect, and the child appeared healthy, and had always been so. The family history was very unsatisfactory, one child, an older brother, had died of pulmonary tuberculosis, and a maternal aunt had died of some form of brain disease.

On December 15th there were numerous hemorrhages found in the retina and vitreous, and the tension of the eye, which had been normal, perceptibly increased. From this time, however, all external signs of inflammation slowly subsided. The ciliary injection disappeared, the vitreous cleared up, there was no recurrence of the hemorrhages, and no pain.

On March 20, 1891, I discovered an extensive lobulated detachment of the retina outward, upward, and downward, with marked fluctuation of the detached retina. Over the rest of the fundus was a yellowish reflex with a few blood-vessels running over it, and resembling both an intra ocular neoplasm and a mass of exudation. From the history of the case and my continued observation of it, I was inclined to believe it to be a mass of exudation the result of a choroiditis and hyalitis. The tension still remained above the normal standard, and I therefore advised enucleation, but the parents declined it.

On May 4th I first noticed an apparent thinning of the sclera in the ciliary and equatorial regions, and as the tension was still increased I urged an enucleation, to which the parents would not consent. I saw the patient once a week till June 1st, and then did not see her again until October 30th. Up to June 1st there was no change in the appearance of health of the patient, but on October 30th there was a very decided change for the worse. The child was anæmic and emaciated, and scarcely ate any food except what was forced on her. Between June 1st and October 30th there had developed a very large ciliary and equatorial staphyloma, and the sclera had become so thinned that in the supero-nasal quadrant it had nearly perforated. There was almost no anterior chamber, the iris being dilated *ad maximum*, and closely applied to the cornea at its periphery. The lens was opaque and pushed forward almost against the cornea. The tension was + 2. The eyeball was freely movable in all directions, and there was no pain and no sensitiveness on pressure. I again urged an enucleation, and the parents consenting, the left eye was removed on November 2, 1891. The child immediately began to improve in appearance. Under the influence of iron, quinine, and plenty of food, she increased in flesh and weight, and this improvement continued until December 19th, when she began to complain of headache and nausea, and actually vomited several times. The orbit was carefully examined and nothing abnormal found.

On December 26th the left pre-auricular gland was found to be enlarged, as well as the gland at the angle of the jaw on the left side. One week later the submaxillary and upper cervical glands on the left side were found enlarged. There was still nothing discoverable in the orbit, and the other eye remained intact.

On January 11, 1892, she complained bitterly of severe frontal headache, sometimes screaming aloud from the pain.

On January 14th there was first noticed a probable return of the growth in the orbit, the tissue at one point being hard and infiltrated, and the lids being slightly swollen and sensitive. By February 5th, there was a very perceptible infiltration of the orbital tissue along the floor of the orbit, and a more decided enlargement of the glands on the left side, particularly of the submaxillary gland. The frontal headaches were now constant and very severe.

On February 12th the symptoms were all more marked, and for the first time the right eye was found to be involved, there being a small but distinct yellowish reflex in the infero-temporal quadrant of the fundus.

On February 19, 1892, the glandular enlargement on the left side of the neck had become enormous, so

[1] Read before the American Ophthalmological Society, July 20, 1892.

that the head was carried toward the right side, and there was considerable difficulty in opening the mouth. The left orbit was filled up by the new-growth nearly to the orbital margin, and the lower lid was pushed forward. In the right eye the iris was very much dilated, and very sluggish and discolored, and there was a large and distinctly elevated yellowish patch in the infero-temporal quadrant of the retina. There was no marked change in the appearance of the papilla, but the child was evidently nearly blind, there being faint quantitative perception of light. This was the last time I had an opportunity of examining the child, as she became stupid and gradually comatose, and died early in March, 1892. Most unfortunately, an autopsy was not permitted by the parents.

The eyeball which was enucleated was given to Dr. J. E. Weeks, the pathologist of the New York Eye Infirmary, who has been kind enough to make a careful examination of the specimen, and has sent us the following report: The eye measured 24 mm. in the vertical diameter, 24 mm. in the transverse diameter, and 32.5 mm. in its largest diameter through the apex of the staphyloma. The latter measured at its base 18.5 mm. by 10 mm. On opening the globe, the anterior chamber was found to be almost abolished, the lens being pushed forward by a large grayish mass which extended from the posterior part of the globe forward to and filling the staphyloma. At the equator the grayish mass was separated from the sclera by a collection of thin brown fluid.

Microscopical Examination.—The iris was atrophic and was firmly adherent to the cornea at its periphery. In the vicinity of the staphyloma it was entirely disorganized. The lens was pushed forward and decidedly shrunken, so that it did not fill its capsule. The ciliary body was much reduced in volume and decidedly flattened, and at the site of the staphyloma it was entirely destroyed.

The choroid was very much atrophied, and a few isolated groups of glioma-cells were found on its inner surface. Very little of the retina could be recognized. Anteriorly, but away from the vicinity of the staphyloma, it was atrophic, but traces of it were still present. Farther back it was infiltrated with small cells and was enormously thickened and soon lost in the central mass, its elements being entirely indistinguishable. In the optic nerve there was a small cell-infiltration of the nerve-bundles, and a collection of small cells in the sheath. It was difficult to determine whether these cells were merely leucocytes or something else. In the sclerotic, at the apex of the staphyloma, the connective-tissue bundles were separated from each other, the spaces being filled by the cells of the new-growth. In some places the cells extended almost to the surface. Wherever vessels or nerve-trunks passed through the sclerotic a small cell-infiltration was found. The cornea was almost normal. The central mass was composed of an aggregation of small cells with large nuclei and little protoplasm; very fine fibres, apparently off-shoots from the cells, passed in all directions. Vessels with very thin walls passed through the mass in all directions, and in some places were surrounded by quite wide lymph-spaces. The tissue is apparently that of glioma.

Camphoid.—Dr. Martindale (*Phar. Jour. and Tr.*, 1892) gives the name camphoïd to a 1 to 40 solution of pyroxyline in Rudini's solution of camphor in absolute alcohol, made by adding to camphor its own weight of absolute alcohol. This solution, when painted upon the skin, leaves, after evaporation, a thin pellicle or membrane-like covering, and the author thinks it may prove a good substitute for collodion, since washing does not cause its removal. The solution, furthermore, readily dissolves phenol, salicylic acid, resorcin, chrysarobin, and iodoform.

Salol in Cystitis.—Dr. E. M. Sympson has awakened to the knowledge that salol in doses of five grains is most efficacious in cystitis.

Clinical Department.

A CASE OF ACQUIRED COMPLETE ATRESIA OF THE CERVICAL CANAL, WITH MENSTRUAL RETENTION, RESULTING FROM SYPHILITIC ULCERS IN THE CANAL.

Operation by Professor Hennig, of Leipzig, with Complete Recovery.

By M. W. BARNUM, B.S., M.D.,

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The following case, which on account of its rareness, is pathogenetically interesting, was given to me some time ago in Leipzig by Professor Hennig, for the purpose of publication.

Emma G——, servant girl, aged twenty-three. The patient was of middle height, dark, well-formed, and had the appearance of being strong and healthy. She did not remember at what age the menses had first appeared; but stated that the flow had always been regular and normal, and that she had never been pregnant. When she came to the clinic it was with the complaint that for several months she had not menstruated, and that she had intense pain in the lumbar and sacral regions, and also in the lower portion of the abdomen. These pains, according to her description, strongly resembled labor pains. Every four weeks her symptoms appeared with great intensity, and were accompanied by a feeling of tenseness and fulness across the abdomen. Of late, the pain had become so agonizing in character, that at times she lost control of herself, and could but roll over and over on the floor. Besides these symptoms she complained of pain in the stomach, nausea, and anorexia; she also complained of a spasm at the neck of the bladder, and a mucous discharge from the vagina.

In making a physical examination of the case, the inguinal glands were found to be greatly enlarged, but not painful. In the throat papulæ were discovered, and she finally confessed exposure to specific virus.

By an examination per vaginam the os uteri was found to be hard, the cervix elongated and pointed. With the speculum the external os was found to be pale, narrow, and had evidently a lining of cicatricial tissue. The cervical canal was only penetrable for three millimetres with the smallest silver sound. By means of the combined touch per rectum, one could feel the uterus round as a ball, and of about the size it should have had in the second month of pregnancy. The uterus was within the pelvis proper, and was readily movable in all directions. The consistency of the uterus, when tested with the apposed fingers, was tense and elastic. The ovaries were normal, and no abnormality of the Fallopian tubes was discoverable. The diagnosis was: Atresia of the cervical canal with hæmatometra, the atresia probably being of specific origin.

The patient was admitted to the Hospital of Professor Hennig, and an operation was performed on July 24, 1889. The bladder and rectum being emptied, chloroform was administered. When narcosis was complete a sharp-pointed sound was brought into the os, under guidance of the finger. Then controlling the instrument from the rectum, the uterus being fixed through the abdominal wall by the hands of an assistant, the sound was forced through the canal for three centimetres. The sound was then withdrawn, and Kuechenmeister's metrotome introduced and thrust through the wound, the opening being in this manner laterally enlarged. This instrument, devised by Dr. Kuechenmeister, is twenty centimetres in length, curved like a uterus sound, and bears a button on the end. The lower portion, just above the button, consists of a thin, oval, horizontal, double-edged blade, about two centimetres long and one centimetre wide. Through the opening thus widened escaped about ten grammes of thickened blood of tarry consistency, mingled with pus and clots of blood. The

evacuation of the uterine cavity was assisted by flushing with tepid water, through Bixby's two-way uterus cannula. A microscopical examination of the blood showed disintegrated corpuscles, crystals of hæmatine, and a number of round pus-cells. A laminaria tent was then introduced into the wound and a tampon of iodoform gauze into the vagina. The subsequent course was apyretic and in every way uncomplicated. Therefore, on the eighth day after the operation, a mercurial treatment by inunction was begun. This treatment was continued for three weeks, and at the same time sitz baths and full baths frequently given. The general condition of the patient was bettered, and the papulæ in the throat vanished. The next menses occurred without complication, and the discharge was free. The patient was thereupon allowed to leave the hospital.

Since that time up to the present, or at any rate about eight months ago, when I saw the patient last, she had menstruated regularly and with but little pain. The cure was complete.

In this case the atresia had quite evidently resulted from cicatricial contraction, following the proliferation of connective tissue incident to the adherence of the contiguous ulcerated mucous surfaces in the cervical canal.

United States Naval Hospital, Washington, D. C.,
April 28, 1892.

THREE CASES OF MALARIA IN CHILDREN TREATED SUCCESSFULLY BY METHYLENE BLUE.

By JOHN H. HUDDLESTON, A.M., M.D.,

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July 7th, three sisters, aged respectively ten, seven, and five years, came to the Medical Dispensary of Gouverneur Hospital with this history: For about two weeks all had been suffering every second day with chills and fever. The chill, severe enough to cause general shaking and chattering of the teeth, began usually nearly at 9 A.M. and lasted about an hour; there followed a fever and then a cold sweat. Toward evening they recovered, and the next day they felt perfectly well. The day following the attack was repeated. The children were Russian Poles, and had reached this country with their father and mother about a week before the illness began. The mother was similarly ill three days, and then recovered untreated. The father remained well. The children had always been well before coming here.

Physical examination showed them to be fairly well-developed and nourished, but all somewhat pale; lungs and heart in each presented nothing abnormal. In the oldest the upper limit of the splenic dulness was found at the eighth rib in the anterior axillary line, but no tumor was palpable. In the younger children neither percussion nor palpation revealed any enlargement. This was on a day between the chills. The next morning at 8.30 I saw the children and found the youngest apparently convalescent from an attack which, by the mother's account, had lasted most of the night. The other children were well; all the temperatures were normal. At noon I found that both older children had had chills in the forenoon, and were then in the fever; the temperature of the oldest was 105.2° F., and of the second, 102.4° F. Cover-glass preparations of the blood from all three were made, and the plasmodium seen in that from the oldest. In the others nothing abnormal was noted. The same evening the administration of methylene blue was begun, one capsule containing a decigram being given to the oldest every three hours, to the next every four hours, and to the youngest every five hours. This was continued regularly for four days, except that the medicine was not given at night when the children were asleep. The temperature was taken at noon daily, and found normal regularly, except that on the second day the second child had a temperature of 100° F., with no other symptom. The urine, colored blue, was passed without difficulty, and in sufficient amount in every case. Examination of the sediment gave a negative result. All medicine was stopped after the fourth day; the blood was again examined and nothing abnormal noted. Since then there has been no relapse.

70 West Eleventh Street.

Progress of Medical Science.

First Sign of the Menopause.—Naphey says: "In the change of life the first sign is visible at the lower part of the neck, on a level with the lower two cervical vertebræ. There commences an accumulation of fat, which often grows to form two distinct prominences, and is an infallible index of the period of a woman's life."—*New York Medical Times.*

Abnormal Sweating.—Dr. Frazer-Nash reports (*The Lancet*, April 2, 1892) the case of a Hindu boy, upon whose skin a crystalline deposit formed, which suggested the idea that he had bathed in a saturated solution of some salt, which had, in drying, deposited its crystals. The latter were glistening and amorphous to the naked eye, and required some friction to remove. About the head the crystals were larger than elsewhere. After two or three months of tonic treatment the crystals ceased to appear. The author had seen a number of similar cases, always in natives, but had been unable to discover the cause or the nature of the crystals. The urine was usually normal, and no irritation of the skin appeared to be produced by the deposit.

Purgatives after Abdominal Operations.—Dr. Championnière, in a discussion before the Société de Chirurgie (*Gazette des Hôpitaux*, No. 22, 1892), says it is at times difficult to establish a precise diagnosis between intestinal obstructions of various causes and true strangulation. In such case the administration of a purgative is an heroic measure to fix the diagnosis, and one offering no danger. He regards it as good practice to purge all patients as soon as possible after laparotomy. He admits that the rule may have its exceptions, but as a general thing this practice has given excellent results. Lawson Tait expressly recommends purgation each time the temperature goes up. Others as well as Championnière have adopted this method and have been satisfied with the results. It is admitted that where intestinal ulceration may predispose to perforation under the influence of a purgative, the latter should be withheld. He believes fully, in spite of the contrary opinion of Dr. Routier, that patients may die of intestinal paresis, and has observed cases which leave no doubt in his mind regarding it. Almost unanimity of opinion regarding the value of purgatives prevailed among the laparotomists who entered into the discussion, and most of them agreed that their early administration was advisable. The only difference between Dr. Championnière and his colleagues being that he purges as early as the day after operation, and many of them prefer to wait a few days.

Labyrinthine Deafness Treated by Pilocarpine.—During the last few years a number of papers have been published detailing cases of deafness treated by the use of pilocarpine. In the *British Medical Journal* for April 2, 1892, is a paper by Field, of London, in which he details the results of his use of the drug. His method of administration is to inject into the back of the arms a solution of nitrate of pilocarpine, of a strength equal to one-third grain to ten minims. The dose at first is one-twelfth grain, gradually increased to one sixth, and, if this is well borne, to one-fourth grain. Diaphoresis and salivation rapidly manifest themselves, and it is well to give a little ammonia in order to prevent the depression consequent upon the action of the drug. The patient is then made to lie on a sofa, and is well covered with rugs, the head

being enveloped in a shawl. These wraps are very carefully removed by degrees, in order to prevent catching cold. Untoward symptoms are not to be feared if small doses are used at first. The author is very positive that pilocarpine only does good to a certain set of cases, and gives the following rules for determining its indications: 1. The case must first be carefully diagnosticated as actually one suitable for treatment with the drug. Labyrinthine deafness, it must be remembered, is not a disease of common occurrence. 2. The larger number of the patients that hear better in a noise (when in a train or omnibus, for example) do not derive much, if any, benefit from pilocarpine, if used independent of other remedies. 3. The best test of hearing is to employ a large tuning-fork with a wooden handle, acting as a sounding-piece, to put on the head. Some of the small tuning-forks commonly used are worthless to the aural surgeon. 4. Cases in which the tuning-fork on the forehead is heard indifferently, or scarcely at all, may be suitable for treatment with pilocarpine. 5. Patients with a syphilitic history are usually much relieved, and the possibility of hereditary syphilis in a given case must be borne in mind. 6. The very large number of patients that say they hear worse after a cold are mostly unsuitable cases. 7. Patients who say they can hear when they are spoken to very distinctly, or whose deafness began with a difficulty of discriminating sounds, or who cannot make out general conversation, and hear worse when tired, nervous, or feeling out of health, are more promising cases than the last mentioned. 8. In arriving at a diagnosis, the state of hearing, as tested by the watch and the condition of the drumhead, should be noted. 9. Some cases of marked aural vertigo derive benefit from pilocarpine. 10. If middle-ear disease is associated with mischief in the internal ear, the Eustachian catheter should be passed from time to time for the injection of vapors.—*Therapeutic Gazette*, June, 1892.

Surgery of Pott's Disease.—Dr. Chipault (*Rev. de Chir.*, No. 7, 1891) presents some new facts relating to the subjects of caries, Pott's disease, and Treve's operation for lumbar abscess. In a case of tubercular caries of the bodies of the three lower lumbar vertebræ, with extension on the left side compressing the roots of the sciatic nerve, and causing severe sciatica, in a boy of nine years, large fungous masses of tubercular tissue were found and curetted. A fortnight later the pain and lumbar contracture had completely disappeared. In three other cases of Pott's, with paraplegia, the author has practised a method of treating ante-medullary lesions by trephining, opening the spinal canal, and drainage through the canal. Two of the cases recovered, and one succumbed to pneumonia a month after operation. The author's conclusions are: 1. The operation, which is anatomically possible, requires skill, though injury to the meninges and spinal nerve-roots is easily avoided. Drainage and irrigation of the centres of disease through the vertebral canal do not occasion disturbances of the medulla, even transiently. 2. In treating tubercular foci directly results not only palliative but curative may be hoped for, and such as are impossible with methods hitherto employed.

Hydrastis Canadensis in Obstetrics.—Dr. Bossi thinks that in hydrastis canadensis we have a remedy which will have a hæmostatic action upon the uterus without exciting it to contract, and one which can be administered with impunity during pregnancy or labor. He considers the stage of dilatation as the most favorable for its administration. His conclusions are as follows: 1. There is no danger to either mother or child attendant upon the use of hydrastis canadensis. 2. Its action is hæmostatic, whether used as a prophylactic or for its immediate effect, and there is no ecbolic influence exerted upon the uterine muscle. 3. Its value as a therapeutic agent in obstetrics is superior to that of ergot, since it accomplishes the same results without exposing the patient to the same dangers. The fluid extract may be used: *a*. In the hemorrhages which occur during pregnancy and the puerperal state, in the amount of from one hundred to one hundred and fifty drops a day, in three divided doses. *b*. In hemorrhage, during labor, in about four doses of fifty drops each. *c*. As a prophylactic against *post-partum* hemorrhage, and in cases of hydramnios, uterine inertia, and excessive development of the fœtus, in profound anæmia, and where previous labors have shown that there exists a tendency to hemorrhage.—*The American Practitioner and News*, February 27, 1892.

Salicylate of Bismuth in Infantile Diarrhœas.—Mikhnevitch (*Med. Obozrenië*, No. 6, 1892), having tried the salicylate of bismuth in 50 cases of diarrhœa in infants under two years of age, reports that, of the number, only 2 died (a boy of eight months with pelvic suppuration consecutive to intractable colitis, and an infant of five months, born prematurely and exceedingly sick since its birth). The following formula is recommended:

℞. Bismuthi salicylici ..... gr. xxiv.
Gummi arabici ..... ʒ j.
Sacch. albi ..... ʒ jss.
Terendo adde aq. dest. ..... ℥ ij.
Fiat lac, tum adde aq. dest. ..... ℥ iv.

M. D.S. The bottle to be kept in cold water or ice, and to be shaken well before use. One or two teaspoonfuls to be given from three to six times daily.

Each teaspoonful of the mixture contains about one-half grain of the salicylate, which constitutes a normal dose (three or four times daily) for an infant of from six to eight months of age. In cases of offensive diarrhœa the administration should be preceded by a dose of castor oil.

The Treatment of Posterior Spinal Sclerosis by Extension.—Dr. Benedikt (*Wiener Medizin. Presse*, 1892, No. 1) reports the employment of extension of the vertebral column in a considerable number of cases of posterior spinal sclerosis, with great improvement in gait and station, and mitigation of the neuralgic pains. He employed a modification of a method originally described by Bonuzzi, in which no apparatus is required. The patient is made to lie supinely on a table, bed, or sofa, with the head and upper portion of the spinal column partially elevated, while the lower extremities are grasped at the ankles and carried upward over the body and brought down over the shoulders. In this way, it has been demonstrated, a considerable degree of extension of the spinal column is obtained. The method possesses manifest advantages over suspension.

The Dyspnœa of Advanced Bright's Disease.—Dr. Steell thinks that common dyspnœa of advanced stages of Bright's disease is due to heart failure, and is not toxæmic. He points to the benefit obtained in many such cases from the hypodermic injection of morphia, as inconsistent with the presence of toxæmia. He recommends digitalis, or when it fails, strophanthus, citrate of caffeine, nux vomica, or strychnia. In paroxysmal dyspnœa he says the nitrates are disappointing; he recommends morphia, enjoining caution in its use, and its combination with atropine.—*The Birmingham Medical Review*, June, 1892.

Epidermine is another new local application recommended as a vehicle for the various drugs used in skin diseases, etc. It was introduced by Dr. Rothziegel, of Vienna, and is composed of water, glycerine, and beeswax. It has the appearance of a semi fluid, milky mass, and dries in the air. With iodoform in ten to twenty per cent. strength, it has proven efficacious in burns, and with ichthyol in erysipelas and frost-bites, while with iodide of lead it has been found to act well in glandular inflammation and orchitis.—*Journ. des Mal. Cut.*, May, 1892.

MEDICAL RECORD:

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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PROGRESS OF THE CHOLERA.

THE reports from Russia show that the cholera is steadily working along toward the western frontier, despite the efforts of the Russian authorities to stay it. We noted last week, that it had appeared at Warsaw, and since that writing other towns in Poland have been attacked. All the nations of Western Europe are adopting extraordinary precautions to prevent the disease from passing the Russian frontier, but it is hardly probable that it can be kept back entirely when there is such a constant stream of emigration from the country. The Berlin authorities have had the emigrant station at Runleben, near Spandau placed under government medical supervision, and no emigrants from Russia will be permitted to leave the train at any other station. The Austro-Russian frontier is guarded by a military cordon, and the autumn manœuvres of the Galician army, which were to have taken place in the presence of the Emperor at Przemysl, near Lemberg, have been abandoned.

The presence of cholera at St. Petersburg is finally admitted by the officials, and a panic has seized upon the inhabitants of the city, many of the merchants have closed their shops, and all who are able to get away are fleeing to the German and French watering-places. In Moscow, also, the panic is increasing, notwithstanding, or possibly because of, the efforts of the authorities to repress the publication of new cases of the disease. The medical lectures at the Universities have been suspended until November 1st, the students having been sent off to the infected districts to assist in combating the disease. At Nijni-Novgorod the fair is practically closed, and the city is in charge of the military. The government is distributing boiled water for drinking to the poorer classes, and, in order to induce them to take it in place of the ordinary water, has adopted the novel plan of mixing red wine with it. It is reported that four of the cholera victims in this city were American tourists who were so foolish as to visit the fair despite the warnings of the Russian authorities. An incredible report comes from Yaroslav, on the Volga, to the effect that the hospital authorities had a drain constructed through which all the sewage from the hospital was emptied into the Volga immediately above the point whence was drawn the water supply for the city. The report stated further that the Governor interfered. Well he might! Very few of the cities of Russia are sewered, even Moscow being unprovided with any other means for the disposal of refuse than cesspools. The total number of deaths from cholera in Russia up to August 1st was nearly 25,000.

From Vienna comes the disquieting news of the occurrence of several cases of "cholerine." It is possible, of course, that these are really nothing more serious than cholera nostras, of which there are numerous cases every year in most of the larger European cities. But at this time the presence of this affection naturally excites alarm. It is to be hoped that the city authorities will not try to dissemble, but will declare without reserve the nature of the disease. The truth is sure to come out sooner or later, and any attempt to repress it is short-sighted and will be productive only of harm. In Paris, cases of "cholerine" are still reported, and at Argenteuil over one hundred deaths occurred within a week from what was called choleraic diarrhœa and typhoid fever.

The epidemic in Persia, which was supposed to be subsiding, has broken out with renewed violence, the cities of Astrabad and Teheran being specially afflicted. In the former city serious riots have occurred, the dealers in liquor being the chief sufferers. The conscience of the people was touched, for they believed that the scourge was sent by Allah as a punishment for their disregard of the Koran's prohibition of wine-drinking, so they looted the liquor shops and drank up all there was to be had, in order that the practice might be put an end to at once. In Arabia, it is said, the Province of Harrar has been almost depopulated in consequence of the cholera, whole villages being deserted by their few remaining inhabitants.

No cases have been reported at the time of writing among any of the immigrants arriving at this port. There is need of special vigilance at this time, and it is reassuring to see that the authorities are fully alive to the responsibility that rests upon them. We wish that they had more capable ships' surgeons to rely upon for the medical history of each voyage; but in spite of this there is no cause for alarm in this country, and even if a few cases should step in it is unlikely that any epidemic will follow.

MURDER AND SEXUAL PERVERSIONS.

THE case of Alice Mitchell, which has just been tried at Memphis, Tenn., is a painful illustration of sexual depravity and the result of bad educational influences. The young woman was afflicted with an affection which Science, with a big S, calls *psychopathia sexualis*, and pronounces the subject a victim of a perverted sexual instinct. The pervert in this case attached herself to a Sapphic friend whom she killed one day in a fit of jealous fury. On trial, the defence of insanity was made. The medical experts were, we believe, unanimous in pronouncing the case one of a primary degenerative insanity; and the jury brought in a verdict of insanity.

We do not wish to contradict the combined testimony of so many alienists with reputations evidently very high in Memphis. Technically, perhaps, the girl was best considered insane; but we cannot avoid believing that if this alleged lunatic had been treated for worms, leucorrhœa, constipation, or some other of the frequent mechanical excitants of unhealthy sexual desire, or if she had been taken in hand early by those in authority, and received a course of bread and water, and perhaps some strong

corporeal applications, she would not have become a Lesbian lover or a murderess.

There is no function easier to control or to corrupt than the sexual. While some sexual perverts are born so, the majority are not, but form their habits through gradual vicious indulgence. Nearly all are amenable to moral influences, that is to say, to rewards and punishments. The sexual pervert may be technically insane, but he or she is legally responsible and should be so held.

Alice Mitchell has escaped the penalty of her depravity and her crime. The story may not be without profit to parents, however. The passionate friendships of young girls may be innocent and charming, but they need the wise scrutiny of those who have charge of them.

Perverted sexuality quickly breeds a desire for more and more filthy indulgence. Of nothing can it be more truly said: *Facilis descensus Averni.*

LARGE FEES.

A Chicago physician has received $2,000 for his services in a case of intubation for diphtheritic laryngitis. The parties disputed the bill for six months, and at last put it in arbitration. The full charge was allowed and promptly paid.

A New York physician was not so fortunate. His bill was $2,500 for ten days' attendance on a case of typhoid fever in a Southern town. The matter was sent to a jury, who awarded the doctor $1,500.

These cases have both been somewhat *causes célèbres*, and have led to many satirical remarks about doctors' fees. There may be extortionate charges occasionally, but, take it as a whole, the physician is poorly paid for the work he does. He never accumulates riches, and is generally fortunate if he saves enough for his old age. Medical services are worth more than in former years, and should be better paid.

The Ideal Family Physician.—The Hon. Thomas F. Bayard recently addressed the class at one of the medical colleges in Baltimore, having for his theme "The Lawyer and the Doctor." It has been his fortune, he says, to be thrown in contact with not a few medical men who have been "as the salt of the earth" in their respective communities. A man who is already eminent by reason of his natural endowments may be said to double his talent by becoming a physician. "It has been my personal fortune," says Mr. Bayard, "to know such a man. It has been my privilege and delight to accompany him in visits where his only medicines were the personal presence and conversation of the man himself. He had shared and had lessened their anxieties; counselled the wayward; cheered the weak-hearted; had rejoiced with them that rejoiced, and wept with the weeping. And I have seen such a man so surrounded by an atmosphere of love and trust, holding as it were the heartstrings of a family in his hands, their guide, philosopher, and friend; and then I realized what a moral force in society the profession, properly comprehended and properly followed, was capable of exerting, and how relatively small a part of its usefulness was the administration of medicine."—*New York Medical Journal.*

News of the Week.

Death of the Inventor of the Hypodermic Syringe.—The ordinary hypodermic syringe is known in France as the *seringue de Pravaz*, the instrument having been invented by Dr. Pravaz, of Lyons. The death of this gentleman is announced in this week's journals. He was the director of an orthopedic establishment in the silk capital, and was well known as a *médecin orthopédiste.*

Yellow Fever.—The Brazilian steamers continue to arrive at this port with yellow fever aboard. A week ago the steamship Glengoil from Santos and Rio Janeiro, was detained at Quarantine for fumigation, having had the disease aboard. Two of the crew had been sick during the voyage and one had died.

Dr. Hanson, of Norway, is about to go to the Sandwich Islands to study leprosy at Molokai, the Honolulu Board of Health having, it is said, sent him an invitation to do so.

Dr. Anthony Ruppaner, of this city, died suddenly in Pittsburg, on Sunday, July 31st. He was a graduate of Harvard Medical School in 1857, and was sixty-five years of age at the time of his death. He had been called to Pittsburg in consultation, and died of heart disease at the patient's house.

The Mississippi Valley Medical Association will hold its eighteenth annual session at Cincinnati, on October 12, 13, and 14, 1892.

The Best Way.—A lady writes in the *Housekeeper's Weekly* upon "How I Raised my Baby without Medicine."

"**Archives Provinciales de Chirurgie**" is the name of a new surgical monthly journal published in Paris. It is under the editorial management of Dr. Marcel Baudouin, and has been founded by a number of young provincial surgeons, as an energetic "attempt at surgical decentralization" in France.

American Dermatological Association.—The sixteenth annual meeting will be held at the Pequot House, New London, Conn., September 13, 14, and 15, 1892. The following papers are announced. "Iodine and Carbolic Acid in the Treatment of Skin Diseases," by Dr. C. W. Cutler; "Additional Note on the Treatment of Erysipelas, Based upon a Second Series of Fifty Cases," by Dr. C. W. Allen; "A Suggestion for Operative Procedure on Erectile Nævi over Fontanelles, etc.," by Dr. S. Sherwell; "How Should Dermatology be Taught?" by Dr. G. H. Fox; "A Somewhat Unusual Case of Lupus Ulceration of the Nose," by Dr. H. W. Stelwagon; "Lupus Vulgaris Following Exposure to Tuberculous Sputa," by Dr. W. T. Corlett; "Notes on the Treatment of Lupus Erythematosus," by Dr. J. Zeisler; "Alopecia Prematura; its Most Frequent Cause," by Dr. G. T. Elliot; "Cases of Favus Contagion from the Lower Animals," by Dr. S. Sherwell; "Some Observations on the Growth of Achorion Schoenleinii in America," by Dr. L. Heitzmann; "Morphœa Atrophica," by Dr. R. W. Taylor; "Psorospermosis," by Dr. M. B. Hartzell; "Report of a Case of Adenoma Sebaceum, with Microscopic Drawings," by Dr. J. A. Fordyce; "Concomitance and Sequence in Skin Eruptions, and the Influence of One Der-

matosis upon Another," by Dr. C. W. Allen; "The Cicatrices of Syphilis," by Dr. J. N. Hyde; "An Unusual Case of Syphilis," by Dr. R. B. Morison; "An Exaggerated Case of Impetigo Contagiosa," by Dr. G. T. Elliot; "Notes on a Recent Visit to the Leper Hospital at Havana; Leprosy in Charleston, S. C.," by Dr. W. T. Corlett; "Notes on the Use of Thilanin," by Dr. G. H. Fox. The morning session of the second day will be devoted to a discussion of alopecia areata.

An Anti-Cancer League.—In March last Professor Verneuil suggested to his colleague, Professor Duplay, the idea of forming an association the *raison d'être* of which should be the elucidation of the real nature of carcinoma. The idea has now been acted upon, and a committee has been appointed to further the development of this deserving enterprise. The committee includes such well-known workers as Duplay, Trasbot (of the Veterinary School of Alfort), Metchnikoff (of the Pasteur Institute), Reclus, Ricard, and Brault, with M. Masson (the publisher) as treasurer. These gentlemen have just issued an address to the public disclosing therein the objects of the League, and asking for subscriptions in aid of researches. An appeal for collaboration is made to pathologists, clinicians, histologists, microbiologists, veterinary practitioners, and even geographical explorers. Congresses will be periodically held in order to discuss the progress made in bringing to light any information concerning cancer; a journal will be published as the organ of the League, and, when funds permit, prizes will be offered for any discovery bearing on the subject. We can only wish the enterprise success in its arduous mission.—*Lancet.*

Harvard Commencement.—At the Commencement at Harvard, on June 29th, 94 men received the degree of M.D. Of these, 68 were graduates of the three years' course and 26 of the four years' course, 13 received the degree *cum laude*, of whom 9 received also A.M.; 38 had previously the degree of A.B., and 3 some other degree.

The St. Louis Medical Society has refused to admit any more female physicians. It has one female member, who takes no part in the discussions. The members concerned in the rejection of female physicians claim that they should form a society of their own.

The Charlotte Medical Journal is the name of a new monthly, edited by Drs. E. C. Register and J. C. Montgomery. It is well printed and edited. The first number contains a good original article by Dr. Collins, of New York.

Dr. Benjamin W. McCready died at his home in this city on August 10th, aged seventy-nine years. He was born in New York, and was graduated in medicine from the College of Physicians and Surgeons in 1835, subsequently serving on the house staff of the New York Hospital. He was for many years Professor of Materia Medica and Therapeutics at the Bellevue Hospital Medical College. He retired from practice ten years ago, and for three years past has been in very feeble health, although his death at this time was not expected.

A Substance called "Divorcin" is said, in *Der Derenfreund*, to be an excellent remedy for hysterical attacks. Here is an opportunity for the paranomasiac.

Owing to a lack of funds, the Cincinnati Hospital has been compelled to close the venereal and ophthalmic wards.

Hypnotism and the British Medical Association.—Ten years ago the late Dr. Beard went before the British Medical Association and demonstrated some of the phenomena of hypnotism. He was insulted and practically mobbed by Drs. Crichton-Brown, Donkin, and others for his pains. At the recent meeting of the Association a committee, appointed for the purpose, report that they have satisfied themselves of the genuineness of the phenomena and of the therapeutic value of the method.

A Wise Board.—The Wisconsin State Board of Health has refused to recommend the adoption of certain works on "temperance," endorsed by the Woman's Christian Temperance Union, for use in the public schools. The Board adjudges the books to be unscientific and misleading.

The Illinois Board of Health has refused to recognize the diplomas of the German-American Homœopathic College, the German College of Medicine and Obstetrics, and the German Medical College, all of Chicago, and also the diplomas of the Toledo Medical College issued subsequent to the session of 1891.

A Death from Cocaine injection is reported to have occurred at Bellevue Hospital recently.

Professor Verneuil has, on the ground of advancing years, resigned the chair in the Paris Faculty of Medicine which he has so long occupied, with such advantage to the school and such honor to himself.

A Hospital for Consumptives is about to be erected in this city, at a cost of over $300,000. It is to be called the Seton Hospital, and will be under charge of the Catholic Order of Sisters of Charity.

The Complexities of Statistics.—*The Pacific Medical Journal* says: "It will be remembered that in the exceedingly interesting extracts from the San Francisco *Daily Report*, April 30th, to which we gave space in our last issue, appears the statement that during the past year Dr. G. W. Daywalt, 'the pioneer in diseases of mucous membranes,' lost only three out of 126 patients afflicted with diphtheria. Whether these 126 patients were residents of San Francisco or not, is not stated; but we are forced to the conclusion that 123 of them were residents of some other locality, perhaps the Farallones Islands, as of the twelve hundred cases of diphtheria reported to the Board of Health during the year 1891, we fail, after a most critical examination of the books, to find more than three reported by Dr. Daywalt. It is of course not to be supposed that he neglected to report 123 cases, for that would make him liable to a fine of $12,300 ($100 for each offence), besides exposing thousands of people to the danger of contagion."

The *Journal* seems to have placed the learned doctor in what is known nowadays surgically as an "orifice," from which only the technical skill of a Chicago orificialist can help him out.

Reviews and Notices of Books.

Transactions of the Medical and Chirurgical Faculty of Maryland. Ninety-third Annual Session, 1891.

The volume of four hundred pages contains about thirty papers on different topics with much information of interest to the members of the profession in Maryland.

Colorado State Medical Society. Transactions of the Twenty-first Annual Convention. 1891.

This volume contains the usual number of papers on various topics, some of them worthy of wider circulation than can be had when buried in a volume of Transactions.

The Human Figure: Its Beauties and Defects. By Ernst Brücke, Emeritus Professor of Physiology in the University of Vienna, etc., with a Preface by William Anderson, Professor of Anatomy, Royal Academy of Arts, London. 8vo, pp. 188. London: H. Grevel & Co. 1891. New York: B. Westermann & Co.

This book is written by one who requires little introduction to either the scientific or artistic world. The translator has brought to his task an excellent literary quality and a consuming enthusiasm. The book is a study of human anatomy from the standpoint of the artist and portrait-painter. Successive chapters treat of the head and neck, arm and hand, breast and shoulders, abdomen, back, pelvis and its relation to the trunk and thighs, and lastly, to the legs and feet. The different theories adduced are illustrated by references to the various masterpieces of ancient art, and thus the text is appreciated from its practical side. The book is one of great interest alike to artists and physicians.

The Mütter Lectures on Surgical Pathology for 1890–91. By Roswell Park, M.D., Professor of Surgery, University of Buffalo; Surgeon to the Buffalo General Hospital, etc. 8vo, pp. 293. St. Louis: J. H. Chambers & Co. 1892.

These lectures were published successively in the *Annals of Surgery* as they were delivered, and are here brought together in an attractive volume. They strengthen the argument in favor of the establishment of endowed lectureships on special topics. From this source has come during the last ten years, both here and abroad, no small part of our best and most trustworthy scientific knowledge. Of course, in a volume of this sort one must draw largely on the work of others; but Dr. Park has infused into it no little of his own originality, and has put forth much that has never before appeared in English dress.

The first topic considered is the general one of predisposition to infection, with a consideration of the causes of inflammation. Next comes an interesting chapter on pyogenic organisms and a general discussion of their relations to inflammatory conditions. Special chapter headings are surgical fever, peritonitis, tetany, actinomycosis, tuberculosis, pneumonia, and erysipelas. The chapter on pneumonia alludes also to the various exanthemata and diphtheria, while that on erysipelas includes lymphangitis, erythema multiforme, syphilis, gonorrhœa, etc. The use of different sizes of type gives a systematic arrangement to the volume, for which the printer has provided an attractive dress.

Space forbids our discussing in detail the various doctrines set forth. Dr. Park follows largely the views of the modern German pathologists, while not unmindful of the good work done by some of the English toilers in this field. A careful reading will well acquaint one with our residual knowledge of the great subject with which the lectures deal. It will also point out the side-paths which lead to regions as yet unexplored. Not only for consultation, but also for a practical laboratory guide, will the volume be of service, and we congratulate the author on this addition to American medical literature.

System of Practical Therapeutics. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Assisted by Walter Chrystie, M.D., formerly Instructor in Physical Diagnosis in the University of Pennsylvania. Vol. ii. "Fevers," "Diseases of the Respiratory System, Circulatory System, and Hæmatopoietic System," "Diseases of the Digestive System." With illustrations. Pp. 1158. Philadelphia: Lea Brothers & Co. 1892.

The second volume of Professor Hare's large work makes an early and welcome appearance. The first volume won unqualified approval on its merits, and its successor maintains its high standard, and will win fresh laurels for the work. Its scheme is admirable. Instead of giving the therapeutic actions of a drug, it takes up the diseases singly and treats of its therapeutics exhaustively, giving not one plan of treatment, but all known methods that are of the least value. The writers are the best in the profession, and when the work is completed it will be the most valuable treatise on therapeutics in the English language. The task of compiling it is stupendous, but Dr. Hare, with the assistance of Dr. Chrystie, is doing admirable work. The volume in hand opens with one hundred and fifty pages on the treatment of syphilis, by Professor R. W. Taylor. He believes in mercurial treatment by the mouth, beginning medication with the appearance of secondary symptoms. In addition to elaborating this treatment, however, he goes into detail concerning the abortive treatment (in which, by the way, he does not believe), inunction method, fumigation, hypodermic, and bathing methods. The treatment of hereditary syphilis is also exhaustively given. Dr. J. Lewis Smith writes on scarlet fever, measles, rötheln, and varicella. The subjects could not be in better hands. Among other methods of dealing with the hyperpyrexia of these diseases, Dr. Smith discusses the much-talked-of German method of cold and tepid baths, and lays down most excellent indications for their use, with full details as to the method of giving them. The complications of the diseases, including those of the eyes and ears, are fully dealt with. Space will not permit going into detail on each chapter, but they are all uniformly good and deserving of nothing but praise. "Small-pox" is in the hands of William M. Welch, M.D.; "Typhoid Fever," Frederick P. Henry, A.M., M.D.; "Typhus Fever," Manuel Dominguez, M.D.; "Malarial Diseases and Dengue," George Dock, M.D.; "Yellow Fever," Jerome Cochran, M.D.; "Cerebro-spinal Fever," J. C. Wilson, M.D.; "Diseases of the Respiratory System" are exhaustively treated by Drs. Ralph W. Seiss, Charles E. Sajous, R. Chalmers Cameron, James T. Whittaker, M. Howard Fussell, Edwin E. Graham, and Rudolph Matas; "Diseases of the Circulatory System and Hæmatopoietic System" are written about by Drs. W. H. Thomson, T. Lauder Brunton, Frederick C. Shattuck, J. H. Musser, and Richard C. Norris; "Diseases of the Digestive System" by Drs. A. D. Blackader, D. D. Stewart, Frederick A. Packard, Edward Martin, Roswell Park, and Charles B. Kelsey. These names are, without exception, those of the most eminent men in their several lines of practice, and are a voucher in themselves of the excellence of the work.

The Chinese: Their Present and Future; Medical, Political, and Social. By Robert Coltman, Jr., M.D. Philadelphia and London: F. A. Davis 1891.

This book describes the experiences which the author encountered while travelling in China. It is plainly written, gives some neat illustrations, and is sufficient to give an excellent idea of domestic life and domestic institutions in China. It is also very instructive, and is good for "leisure time" reading for the busy medical practitioner.

Society Reports.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-eighth Annual Meeting, held at Fort Griswold House, New London, Conn., July 20 and 21, 1892.

Gunpowder Injury to the Eyes.—The first paper was that of Dr. Charles A. Oliver, of Philadelphia, entitled, "History of a Case of Gunpowder Injuries to both Corneæ, Irides, and Lenses, with subsequent Restoration of Vision to almost full Acuity."

The patient, a young man aged eighteen, July 4, 1891, received the powder contents of a blank cartridge squarely in the face from a distance of three feet, the gravest part of the injury being several penetrating wounds of both corneæ, with deposition of powder in both irides and lenses. When the patient was first seen by the writer, sixteen hours after the accident, there was found to be in the left cornea a rather peripheral wound, with corresponding tear in the iris, through which a powder grain could be seen sticking to the lens. Another deep wound extended almost through the cornea. The fundus was apparently normal. In the right eye there was a penetrating wound of the cornea with injury to the iris. The lens was swollen and rapidly becoming opaque. Four days later there was an outburst of secondary glaucoma. Eserine and cold compresses were then employed; the following day an iridectomy was made. The wound healed promptly, and atropine was resorted to on account of slight tenderness in the ciliary region. In the left eye there was continuous improvement. When the patient was discharged, September 4th, there was good perception of light in both eyes. Two weeks later a broad, round hole was made in the lower half of the capsule, securing vision of $\frac{5}{10}$ with proper correction. A free double discission of the left lens was also done, obtaining vision of $\frac{5}{10}$. Since the discharge of the patient (one year), the eyes have remained perfectly quiet, and the patient pursues his occupation of outside delivery agent in a large retail store.

Removal of Fragment of Steel from the Vitreous Chamber by means of the Electro-magnet, with Preservation of Nearly Normal Vision.—Dr. Samuel Theobald, of Baltimore, reported this case. The piece of steel, which was very small, had passed through the margin of the cornea and through the iris near its periphery, but fortunately missed the lens. It had been in the eye eleven days when the attempt was made to extract it, and had excited a dangerous degree of inflammation. Under antiseptic precautions a longitudinal incision, about four millimetres long, was made through the sclerotic and deeper coats of the eye, between the inferior and external recti muscles and back of the ciliary body. Through this the sterilized magnet point was introduced into the vitreous chamber, and the bit of steel was withdrawn. The after-treatment consisted in the application of a lotion of opium and boracic acid, and the instillation of atropia. The eye is now (three months since the removal of the foreign body) very nearly normal in appearance, and has vision $= \frac{20}{xxv} +$.

Foreign Body in the Retina.—Dr. F. Buller, of Montreal, Canada, reported the case of a young man, who had been struck in the left eye with a piece of metal six days before coming under observation. There was a penetrating wound of the cornea with perforation of the iris and zonula, but no opacity of the lens. A short distance below the papilla was seen a piece of metal lying in the retina. Rest and instillation of a two-grain solution of atropine was ordered. Twenty-six days after the injury, the eye felt well. Vision $= \frac{6}{xx}$. There were pronounced evidences of neuro-retinitis. The piece of metal was still quite distinct. Fourteen months later the eye was still giving no trouble. Vision $= \frac{6}{9}$. The foreign body had entirely disappeared from view, and it was thought that an attempt to extract it would probably have to be made under less favorable circumstances than if it had been made while the body was in sight.

Traumatic Irido-choroiditis.—Dr. Charles Stedman Bull reported a case of this nature (see p. 189).

Hyaline Bodies in the Nerve-head.—Dr. George E. de Schweinitz, of Philadelphia, Pa., described hyaline bodies in the nerve-head from the standpoint of microscopic examination, and reported a case in which he had observed the well-known appearances of the globular formations in the papilla during life, and afterward had the opportunity of making a thorough microscopic investigation. The patient was a male, aged forty five, who had been injured in the head some twenty years ago. The optic nerves were partially atrophic, and the globular masses on ophthalmoscopic examination appeared in a circle slightly within the apparent margin of the nerve-head, and were capped with shining particles which glistened like cholesterine crystals. At the post-mortem examination the following lesions were found: 1. Compound hyaline bodies in the nerve head, situated in their seat of predilection within the tissue of the papilla, anterior to the lamina cribrosa. 2. Atrophy of the optic nerve, which may or may not have antedated the formation of the hyaline bodies, but which evidently was not caused by them. 3. Thickening of the coats of the arterioles in the optic nerve below the lamina, and in the central artery in the neighborhood of the compound hyaline bodies; a change in the adventitious coat of the vessel suggesting hyaline degeneration, but proved by differential stains to be composed of a different material from these bodies. It was held that they have nothing in common with the choroidal excrescences, but are the expression of a pathological process confined to a small portion of the optic nerve.

Etiology of Glaucoma.—Dr. S. O. Richey, of Washington, D. C., read a paper in which he argued that the prime etiological factor of glaucoma is constitutional. He traced the relation of glaucoma to the uric acid diathesis, and said that many manifestations of rheumatic gout are associated with chronic glaucoma, viz., enlarged or distorted joints, a peculiar senile pallor, or muddiness of the skin, periods of mental depression, and other symptoms attributable only to changes in the nervous system. The origin of chronic glaucoma was thought to be the absorption of toxic substances from the intestinal tract, the results of indigestion, and for which reason he claimed that operation in chronic glaucoma was unreliable.

Acute inflammatory glaucoma is a paroxysmal expression of the same condition upon which the chronic affection depends, and local irritation or trauma excites an attack of glaucoma only in the presence of the dyscrasia. Operation saves the eye during a paroxysm, but serves little purpose in chronic glaucoma, even when it does not, by irritation, precipitate a paroxysm. The speaker believed that by correcting and controlling individual habits, especially in the character and amount of food taken, more could be done to preserve vision than by operation; that there might be a possibility of aborting chronic glaucoma if the tendency to it was recognized at an early stage.

The Full Correction of Myopia.—Dr. Edward Jackson, of Philadelphia, Pa., reported the results of such correction in twenty-nine cases of patients under observation from three to ten years. In but three was there any notable increase in the degree of myopia, and these were hard students between the ages of twelve and twenty-one years, and under the full correction they had subsequently become stationary. It was hoped that the reporting of such results would do away with any timidity about ordering the proper concave glasses for constant use. The contra-indications were presbyopia and an exceptional inability to use such lenses for near work, similar to the inability of some emmetropics to do much near work without convex lenses; lowered acuteness of vision, so that the perfect retinal images were not appreciated; ha-

bituation to large blurred images that made sharper images unpleasant in old myopes; and divergent squint established to secure more perfect monocular vision. The temporary inconvenience or pain experienced on first using strong lenses should not be regarded as a contra-indication.

Dr. George C. Harlan, of Philadelphia, Pa., reported twelve cases in which full and constant correction of myopia, of degrees varying from four to sixteen diopters, had been worn for periods of from five to seventeen years. The ages of the patients varied from twelve to twenty-five years. In some the fundus was normal, in some there were moderate myopic crescents, and in others there were extensive choroidal changes. There was not the slightest loss in the acuteness of vision in any case. In eight, the myopia was stationary. In three there was a slight increase in myopia, but in one only was there a considerable increase. The speaker considered excessive convergence without accommodation the most important factor in progressive myopia, and he believed that restoration, so far as practicable, of the normal relation of these two functions was the most valuable therapeutic measure.

The General Form of the Human Cornea, and its Relation to the Refraction of the Eye and Visual Acuteness.—Dr. Swan M. Burnett, of Washington, presented a table showing the measurements he had made with Javal's ophthalmometer, of the cornea of forty-one eyes. These measurements demonstrated the fact that the cornea gradually diminishes in curvature from the visual axis toward the periphery, this diminution being much greater to the nasal side in both emmetropia and ametropia. The difference in the vertical meridian is less than that to the nasal side, but on the average greater than that to the temporal side. The practical inference from these measurements was that the place of election in an iridectomy is the temporal side of the cornea.

Some Incidental Phenomena of the Shadow Test.—Dr. Burnett also read a paper with this title. He believed the shadow test to be, for the generality of cases, a means of testing refraction reliable to within 0.5 D. or 0.75 D. He had examined a certain number of cases, however, in which the findings of skiascopy and by the test-glasses did not coincide. There was in these cases a play of shadows within the illuminated area, moving across the pupillary space, very similar to what is observed in conical cornea. He had not found the corneæ to be more irregular than in eyes which are normal and present no such internal shadows.

The phenomenon was due to some interference in the regular refraction of the light in its outward passage from the fundus, and must be found in the corneal substance (not sufficient to produce a discoverable opacity), in the lens surface, or the lens substance. Of the exact nature of this irregularity we are still ignorant.

The Law of Symmetry of Our Eyes as Manifested in the Direction of their Meridian; its Rules and its Exceptions.—Dr. Herman Knapp, of New York, read a paper with this title. There is a double symmetry in the human visual apparatus: 1, Each eye can be split by a horizontal section into a superior and an inferior half; 2, one eye as a whole is symmetrical to its fellow with regard to the median line of the body. Dr. Knapp discussed only the latter kind, and confined himself to the direction of the principal meridians in one eye compared with that of its fellow. He based his conclusions on the examination of 1,000 successive cases of astigmatism for whom he had prescribed glasses, and who had worn them with more or less satisfaction. The result was as follows: The meridian of strongest refraction (shortest radius of curvature) was:

A. Symmetrically placed in both eyes in eighty-four per cent., viz.: 1. Vertical in both eyes, 60.5 per cent. 2. Horizontal in both eyes, eleven per cent. 3. Diagonal, 45°, in both eyes, 4.3 per cent.; *i.e.*, *a*, upper end of both on nasal side, 2.7 per cent; *b*, upper end of both on temporal side, 1.6 per cent. 4. Intermediate, *i.e.*, between vertical and horizontal, omitting the diagonal direction, 8.2 per cent.; *a*, upper end of both on nasal side, 4.9 per cent.; *b*, upper end of both on temporal side, 3.3 per cent.

B. Unsymmetrically placed in both eyes, sixteen per cent.: 1. Strongest meridians intermediate; *a*, both nasally deflected (upper end on nasal side), 1.8 per cent.; *b*, both temporally deflected, 2.1 per cent. 2. Stronger meridian vertical in one, horizontal in the other eye, 1.3 per cent. 3. Strongest meridian vertical in one eye; *a*, nasally deflected in the other, 3.3 per cent.; *b*, temporally deflected in the other, 3.9 per cent. 4. Strongest meridian horizontal in one eye; *a*, nasally deflected in the other, 1.2 per cent.; *b*, horizontally deflected in the other, 1.6 per cent. 5. Strongest meridian nasally deflected in one eye, temporally in the other, 0.8 per cent.

The above retrospect shows a high degree of symmetry in one pair of eyes, viz., eighty-four per cent. The dominating direction is the vertical, sixty per cent.; next comes the horizontal with eleven per cent.; then the diagonal with 4.3 per cent.

If both meridians are vertical they are geometrically parallel, but they remain symmetrical just as if both were horizontal. Parallel direction in the intermediate position, for instance, 35° of temporal deflection in one eye, and 35° of nasal deflection in the other, occurs but very rarely. There was no instance of it in this whole series.

The symmetry of our eyes may give us many hints in the selection of cylindrical glasses. As symmetry is the rule, we should try to approach this rule also in the sixteen per cent. of exceptional cases, as near as this is compatible with a good correction of the visual acuteness. In conclusion, Dr. Knapp recommended that in our prescriptions of glasses the complete or incomplete symmetry should be at once apparent, saying, for instance, so and so many degrees of nasal deflection, viz., 10°, instead of 80° O. S. and 100° O. D. Furthermore, he proposed a classification of the varieties of astigmatism based on the direction of the strongest meridian, viz., vertical, horizontal, and intermediate or oblique astigmatism, where a deflection of 45° may be called diagonal. The oblique variety has to be subdivided into nasally oblique (simply nasal), and temporally oblique (simply temporal).

Dr. George C. Harlan, of Philadelphia, read a paper giving statistics of direction of the principal meridians of the eye, the results obtained being very similar to those presented by Dr. Knapp.

The Clinical Value of Repeated Careful Correction of Manifest Refractive Error in Plastic Iritis.—Dr. Charles A. Oliver, of Philadelphia, read a paper with this title, based upon a careful study of forty suitable cases, extending over a period of five years. The plan of study was not limited to the ordinary subjective method of lens testing only, but was accomplished by some of the more certain of the various objective plans, such as retinoscopy, opthalmoscopy (both by the direct and the indirect methods), the fundus image test, and lastly by ophthalmometry as a method of control; Thomson's ametrometer and the chromatic aberration test being used at times. As a result of these studies, Dr. Oliver concluded that the careful systematic estimation of the manifest error of refraction found during attacks of iritis was of great value in the rational and scientific treatment of this disease, not only offering itself as a means by which the general prognosis of the affection can be made more certain from time to time during its progress, but permitting itself to serve as a measure or guide, as it were, by which the attacks may be more properly and more understandingly treated, and their duration shortened by the judicious and intelligent use of appropriate drugs; thus giving better opportunity for lessening the chances of harmful and permanent after-changes to one of the most important; and yet one of the most susceptible, organs of the ocular apparatus.

Some Tenotomies of the Recti Muscles for Insufficiencies.—Dr. Oren D. Pomeroy, of New York, reported fourteen cases in which this operation had been performed, and stated that most of the cases of insufficiency that he had met had been relieved by correcting the ametropia. In performing the operation the conjunctiva is dissected as little as possible, and the tendon is divided at its insertion. The patient is then tested by prisms, and if more effect is desired more dissecting is done. It is difficult to tell by inspection whether or not all the tendon has been divided. A little over-effect is usually desired, and if considerable over-effect is obtained a suture corrects it.

Prominent Symptoms of Hyperphoria.—Dr. H. F. Hansell, of Philadelphia, presented a paper based on a study of thirteen cases of this condition. The symptoms given included only those positively traceable to the hyperphoria as demonstrated by their disappearance on the cure of the affection. In two of the cases the symptoms were purely local. Photophobia of moderate degree was present in five cases. Pain in the eyeballs, constant or induced by reading, was prominent in all cases.

Reflex Symptoms.—Six cases suffered with vertigo, and two had violent dyspepsia. In four cases the most prominent symptoms were excessive nervousness, irritability of temper, and at times mental confusion.

Intracranial Lesions with Defects in the Visual Fields.—Dr. Charles Stedman Bull, of New York, reported five cases of this nature in which the character of the lesion had been determined at the autopsy. The first case was that of a lady aged fifty years, who, four years before coming under observation, had received a severe and sudden mental shock, which caused a series of convulsions ending in a condition of profound nervous prostration. Then followed severe neuralgia, coming on every three weeks and lasting for more than a year. The first ocular symptom was night blindness in one eye, with progressive amblyopia. One year later the other eye became affected in the same way. Headaches then came on, boring in character and located at the vertex, but subsequently becoming continuous and confined to the occipital region. There was a large irregular central scotoma in the left eye for form and color, and a smaller scotoma in the right eye. The fundus of the right eye was but little affected, but in the left eye there was a neuro-retinitis in the stage of decline, and beginning atrophy of the optic nerve. The patient lived four years with steadily failing vision. During the last year she had repeated attacks of unilateral convulsions, became wildly delirious, and died in a violent general convulsion. The autopsy showed extensive patchy meningitis on the convexity of the left anterior lobe, some patches over the right anterior lobe, and one large patch over the right parietal lobe. All the arteries at the base of the brain were thickened and their lumen narrowed.

The second case was a young man aged twenty-four years, who had suffered from headaches, muscular twitchings in the upper extremities and face, and attacks of vertigo. The vision of both eyes became affected. There was concentric narrowing of the field of both eyes which steadily increased, and the vision slowly failed. The optic disks, which were at first hyperæmic, became pale and atrophied. The autopsy revealed a small-cell sarcoma involving the optic chiasm, both optic nerves, and the hypophysis.

The third case was a gentleman aged thirty seven years, who had suffered from severe headaches in the left parietal and occipital region, and from a loss of vision in the right half of each field coming on two months after the beginning of the headaches. Six weeks before coming under observation he suddenly lost the sense of smell. Examination showed a vision of $\frac{20}{50}$ in each eye and a bilateral right hemianopsia with concentric limitation of the remaining fields. In spite of treatment there was a steady failure of vision, and the patient finally died fourteen months after the first appearance of the headaches. At the autopsy a small-cell sarcoma was found in the cuneus, on the left side close to the median line.

The fourth case was a lady aged seventy-two years, who had suffered with headaches for more than a year. Six months before coming under observation she awoke with severe pain in the head and total blindness in the left eye. There was confusion of ideas, numbness of the right arm and leg, and thickness of speech. An examination showed slight ptosis of both upper lids, speech thick and slow, tongue pointing to the right side, vision $\frac{20}{40}$, slight lenticular opacities, and bilateral left hemianopsia. The ophthalmoscopic examination was negative. It was thought probable that the patient had a thrombosis and subsequent rupture of the middle cerebral artery on the left side. The lady lived for twenty months, during which time the vision failed but the fields remained unchanged. One morning she was found unconscious, and died three days later. The autopsy showed a patch of softening in the left anterior lobe and in a branch of the middle cerebral artery; running through it was an old plug which completely obliterated it. There was a recent rupture of a branch of the left middle cerebral artery, and a large clot of blood in the middle lobe of the brain close to the Sylvian fissure. All the arteries of the brain were diseased. At the base of the brain on the right side, overlying and pressing upon the right optic track, was a small-cell sarcoma the size of a hazel-nut, situated just in front of the corpus geniculatum laterale.

The fifth case was a gentleman aged thirty-five years, who had suffered for three years from severe headache beginning in the frontal region, but gradually extending all over the head, at first intermittent, but later constant. Occasional attacks of nausea and vertigo. Four years before he had received a violent blow on the left parietal region, which caused bleeding from the left ear and rapidly increasing deafness. Nine months before coming under observation, he began to see double. Six weeks after he came under observation, partial left hemianæsthesia appeared. There was paresis of both external recti muscles. Vision in the right eye was $\frac{20}{100}$, in the left eye $\frac{20}{50}$. There was marked papillitis with numerous hemorrhages. There was homonymous diplopia for all distances, irregular central scotoma for all colors, vertigo very marked with a tendency to rotate to the right side. Toward the end he became nearly blind, and died in profound coma. The autopsy revealed a glio-sarcoma in the right lobe of the cerebellum, close to the peduncle.

The Eye of the Negro.—Dr. Charles W. Kollock, of Charleston, S. C., read a paper based on a study of the eyes of negroes coming under his observation. Many of the individuals studied represented a very pure type of the race. Many of the eye affections are traceable to the effects of syphilis, and to the changed conditions in the life of the negro since the war. Ulcerative keratitis is quite common, but trachoma is exceedingly rare. Cataract is equally frequent in the negro and white. Glaucoma is also of equal frequency in the two races. Retinitis, optic neuritis, and choroiditis are not infrequent. The speaker had not seen retinitis pigmentosa in the negro. No case of embolism of the cerebral artery had been observed. Xerosis of the conjunctiva had been seen in one case, an adult. The negro seemed less likely to have orbital tumors. Two cases of abscess of the orbit had been seen in negro children.

Frequency of Posterior Capsular Opacities at the Place of Attachment of the Hyaloid Artery.—Dr. W. F. Mittendorf, of New York, presented a paper calling attention to the frequency of small, round lenticular opacities which the writer believed were either the remains of the fœtal hyaline artery, or marked the attachment of the artery to the posterior lens capsule. After observing two cases of remaining hyaline artery, the author studied every eye with a strong lens and the ophthalmoscope, and found that in 1,884 persons these opacities were observed in 44 cases, which is a little more than two per cent. of all per-

sons examined. They were observed more frequently in the right eye than in the left, and oftener in the male than in the female; not infrequently they were seen in both eyes of the same patient. They varied in size from a dot as small as the point of a pin, to that the size of a poppy seed, and frequently a magnifying power of a lens of five or six diopters was necessary to see them. The conclusions arrived at are as follows:

These opacities indicate the point of attachment of the fœtal hyaline artery to the posterior capsule of the lens, the nutrition of the capsule being sufficiently interfered with at the time of the absorption of the artery to lead to the cloudiness at this point.

The location of the spot on the capsule is almost invariably a little to the inner side of the posterior pole of the lens. The spots were usually well defined, and in only one out of forty cases were radiating lines, probably corresponding to branches of the hyaline artery, visible. In no case was there any connection of these spots with other opacities of the lens which were seen to exist at the same time. These spots are, therefore, non-progressive and do not lead to any impairment of vision, nor are they apt to lead to any refraction or other changes of the eyeball. It is only in very exceptional cases that they produce subjective symptoms, patient usually being unaware of their existence.

Their occurrence is by no means rare and, as they are congenital, they are found equally often in old and young people. The fact that they appeared to be oftener met with in the male than in the female the author considered accidental, as the number of eyes examined was hardly large enough to establish this point. Their greater frequency in the right eye was probably likewise accidental.

The Corneal Nerves.—Dr. Carl Koller, of New York, exhibited some "Preparations of the Nerves of the Cornea." Erlich's method of injecting a saturated solution of methylene blue into the vessels of a recently killed animal, colors the nerves of the cornea in a beautiful manner, but has the disadvantage of being only temporary, and does not permit of the making of preparations. The speaker had for some time been experimenting with the object of making the staining permanent, but as his method was not yet perfect, it was not described.

Scleral Puncture in Detachment of the Retina.—Dr. T. Y. Sutphen, of Newark, N. J., described the results obtained in two cases, the first successful in restoring useful vision, the second resulting in slight improvement.

In both cases the operation was made under cocaine, and with antiseptic care. The puncture was made with a narrow Graefe knife near the equator of the globe, between the insertion of the external and inferior recti muscles. With the globe well rotated upward and inward, the puncture was made directly through the conjunctiva, while the return of the globe to its normal position really converted the opening in the sclerotic to a subconjunctival opening.

Orbital Cellulitis.—Dr. E. E. Holt, of Portland, Me., reported a case of this disease, the inflammation spreading to the temporal region, thence to the neck, interfering with deglutition, and finally extending to the brain and producing death. A brief report of four similar cases was also given.

Inflammation of Tenon's Capsule in Mercurial Poisoning.—Dr. Charles J. Kipp, of Newark, N. J., reported a case of recurrent bilateral inflammation of the capsule of Tenon, in connection with mercurial poisoning. The first attack resulted from an injury, but the attacks continued to recur. The patient was employed in an incandescent electric lamp manufactory and had become poisoned from the mercury used in his work. The recurrences continued until he gave up this work, and since leaving it (a year and a half) he has had no attack.

Pulsating Exophthalmos.—Dr. R. A. Reeve, of Toronto, Canada, reported a case in which pulsating exophthalmos had followed trauma. It was thought that there was a lesion of the internal carotid, allowing the blood to enter the cavernous sinus. Pressure on the carotid proved of no avail. A year ago the right common carotid was tied, pulsation and bruit ceased for a few hours, and then returned. Some months later, as it was found that compression of the left common carotid stopped the pulsation and bruit, this vessel was tied, but the pulsation still persisted. There is pulsation in the right carotid above the seat of ligation. Pressure upon the right external carotid stops the pulsation and bruit absolutely.

Sub-conjunctival Application of Cocaine.—Dr. Carl Koller, of New York, read a paper in which he advocated the injection of cocaine beneath the conjunctiva in order to insure anæsthesia of the deeper tissues.

Election of Officers.—*President*, Dr. Hasket Derby, of Boston; *Vice President*, Dr. George C. Harlan, of Philadelphia; *Corresponding Secretary*, Dr. J. S. Prout, of Brooklyn; *Recording Secretary*, Dr. Samuel B. St. John, of Hartford; *Delegate to the Executive Committee, Congress of American Physicians and Surgeons*, Dr. John Green, of St. Louis; *Alternate*, Dr. D. B. St. John Roosa, of New York.

The next meeting will be held at New London, Conn., on the third Wednesday of July, 1893.

Correspondence.

THE HEALTH RESORTS OF THE RIVIERA.

(Continued from p. 112.)

VIII.—San Remo.

(From our Special Commissioner.)

GENERAL FEATURES OF SAN REMO—THE OLD TOWN—SOME HISTORICAL REMINISCENCES AND MODERN AMBITION—A GERMAN WINTER COLONY—THE OCEAN ROUTE BY WAY OF GENOA—A LOVELY SITUATION AND PROTECTION FROM THE WORST WINDS—THE AMPHITHEATRE OF HILLS—METEOROLOGICAL OBSERVATIONS—PREVAILING DISEASES—THE NEW CREMATORY—A PUBLIC DISINFECTORY.

> " . . . i monti Ligustici e Riviera,
> Che con aranci e sempre verdi mirti,
> Quasi avendo perpetua primavera,
> Sparge per l'aria i bene olenti spiriti."—L. Ariosto.

San Remo is the largest, the best, and in all respects, the most important winter station on the Italian Riviera. It has certain distinctive features which, being mainly of a favorable character, entitle the place to a high rank among climatic health resorts. Its natural advantages, *i.e.*, situation, protection from winds, etc., give it a winter climate fully as mild and equable as that of Mentone. In addition thereto this little Italian town has been fairly well piloted of late years as regards the introduction of a number of substantial improvements. Thus, since the new aqueduct has been completed, no better drinking-water is found in all Italy than at this place. New streets have also been constructed, old ones have been repaved, cosey villas have been erected, and well-equipped modern stores have sprung up. Cafés, restaurants, a theatre, spacious hotels with attractive gardens, all point to the flourishing condition of this city. Then, again, it speaks well for the common sense of the community that no attempt has been made to create a sudden boom, but that the people have been content to promote the healthful, steady growth of their town, which is so largely dependent on the continued good will of the foreign element. I was informed that of the hundred villas on the rent list not one was left unoccupied this season. At Nice and Cannes dozens of cottages have remained empty for several years past.

At present, under the powerful impulse of a new municipal administration, at the head of which stands the energetic Syndic (mayor) Signor Alessandro Escoffier, serious attention is being given to the introduction of a system of needful sanitary reforms which, if intelligently carried out, will make San Remo one of the healthiest, as it is now one of the most popular winter resorts on the north shore of the Mediterranean.

The town is essentially Italian, but the old San Remo of years ago has almost ceased to exist, except upon the hill, where the ancient houses are still huddled together in the gloomy but picturesque fashion common to all the Ligurian coast towns. One entire section of this mediæval city lies in ugly ruins, the earthquakes of 1887 having been severely felt here. The Mayor tells me that this ruined portion of the city is not to be rebuilt, but the space formerly occupied by rickety houses is to be utilized for a new park, as soon as the disfiguring rubbish of collapsed dwellings and churches will have been carted away. As the view from up there is remarkably fine, the new park will prove to be an attractive innovation.

In my rambles through the quaint old town I was struck by the exceptional cleanliness of the steep, narrow, winding labyrinth of flights of steps, dark alleys, and ancient brick-paved streets. It is a strange sight, this aged nucleus of a modern health resort. Overhead numerous arches connect house to house. Indeed some alleged streets seem more like vaulted cellars, where no straggling ray of happy sunshine ever penetrates, than like the common thoroughfares of human habitations. Yet, so far from reeking with filth, most of these dark and dismal alleys formed, by their "washed" appearance, a marked contrast to what I have seen in the cramped old native quarters of almost all other Riviera towns. Not that disagreeable smells did not sometimes remind me that there was room for further improvement, not that the habits of the native San Remese are above reproach, but official vigilance has here really resulted in establishing a state of affairs which, if the stringent new laws of Italy were always enforced, would leave little to be desired in the matter of public hygiene, and would soon result in a marked decrease of mortality from preventable diseases. Perhaps the San Remese are not entitled to all the credit for this state of affairs, for, quite apart from their good will, the very steepness of the streets gives the rain every opportunity to wash away all nuisances.

Old San Remo is built on a steep declivity, the idea of protection from pirates and corsairs having prompted the choice of site in all these ancient coast towns. Indeed, judging from the pipes for molten lead still seen over some gateways, from the ancient walls, with eye-loops once used for arrows, and from the brackets for the feet of fighting archers, many a fierce struggle must have occurred in the olden days, when the town was a formidable fortress protecting a thriving port. On the flanks of the city hill and along its fan-shaped spreading base, the new strangers' quarters are found. They look bright and cheerful, with their numerous little shops, large and small hotels, and an occasional old palazzo interspersed between pretty villas. There are a few wide streets now, notably the Via Vittorio Emanuele, Via Romana, and several Corsos, which, in spite of frequent clouds of dust, would do credit to much larger towns.

To the artist's eye the tortuous streets and blind alleys of the old town, which claims an antiquity of over two thousand years, will look invitingly sketchy at innumerable points. There are elaborately carved doorways of rare design, in which worm-eaten doors still loosely hang ajar, allowing you to peer into the forbidding darkness of crowded but happy homes. There are crumbling little shrines, mostly dedicated to the Santa Madonna, and bright in all this gloom with various votive offerings, telling their touching tales of simple-minded trust and piety. There is the ugly old cathedral of San Siro, with its mixed colors and more mixed architectural style. There is the sanctuary of the Madonna della Costa, crowning the summit of the old city hill, with its two cupolas gleaming white above the sea of many-tinted but always sombre houses. There are little vine-clad balconies perched up like birds' nests against upper stories of high tenements, clinging vine-stems carefully protected by sheaths of masonry rising from the street, and balconies getting at least a modicum of sunshine. And everywhere the odd arches span their mouldy shapes across the dingy streets, as if to link together for all eternity what the tooth of time is gnawing away to shapeless ruin.

The history of San Remo, like that of most of the coast towns of the Riviera, has been full of vicissitudes. It passed successively under different rulers and dynasties, being connected alternately with Ventimiglia and Genoa, being a fief in turn of the powerful family of the Dorias and of the Dukes of Savoy. French, Spaniards, and English have, at one period or another, taken possession of it. Sometimes it enjoyed a brief independence, and about a hundred years ago formed the capital of a Ligurian Republic, under the romantic name of the District of the Palms. Later it became a prefecture under Napoleon I., and finally passed under the government of Sardinia, being now incorporated with it in the kingdom of United Italy (Macmillan).

San Remo was at one time a flourishing seaport town with an extensive commerce. Even so late as the latter part of the eighteenth century, according to Elisée Reclus,[1] the San Remese still had some eighty vessels, which, being put in requisition by General Bonaparte for his Egyptian expedition of 1797, were taken by the English. This crushing disaster sounded the death-knell of the maritime supremacy of San Remo, then second only to that of Genoa on the Ligurian coast. And although the prosperity of San Remo has been almost completely re-established in other directions, it has not regained its former importance as a mercantile and trading centre.

The port is not accessible to larger craft, and it is doubtful if the contemplated harbor improvements will divert much business to the city. It would certainly not be an unmixed blessing if the present chief aim and concern of the community, namely, the attraction of winter residents from foreign lands, were to be diverted into the uncertain channels of new industrial enterprises. The turmoil of a shipping centre, like Genoa or Marseilles, is not conducive to the best interests of a tranquil health resort. San Remo, if it wishes to retain its prestige as a winter station for invalids, will have to give up its ambition to become again a city of commercial importance. I have alluded to this matter here, because I am well aware that there is a fighting section of the San Remese community who are opposed to all sanitary and similar reforms on the alleged patriotic ground that it is unnecessary to pander to the depraved taste of the foreigner, and that home interests are independent of the influx of strangers. If these minority kickers ever get control of the town San Remo as a sanitarium would surely rue the day.

For obvious political reasons, the Teuton prefers Italy to France. But ever since the lamented Emperor Frederick suffered heroic martyrdom at San Remo, the place has naturally attracted numerous Germans. The latter now organize veritable winter pilgrimages in annually increasing numbers to the Villa Zirio, once inhabited by their dying Crown Prince. It is not surprising, therefore, that the German character of the new winter town should be so plainly visible at every turn. The harsh Germanic guttural strangely offsets the soft sounds of the native Italian patois. On all public promenades, in many of the hotels, in shops, at public festivals, in the *Giardino Publico*, and everywhere where strangers mingle, the German contingent may be seen in full force. Several princes and princelings of leading Teuton tribes have made their southern headquarters here, while British aristocracy, as well as American plutocracy, is represented by a mere handful of permanents, and by only moderately numerous transients. On the other hand, mere "plain people," of Anglo-American origin, constitute a very fair proportion of the international winter colony. Doubtless, when San Remo becomes better known in our country it will be more largely patronized, especially as it has recently been made much more accessible by the new ocean route from New York to Genoa. Before the first-class passenger steamers of the North German Lloyd commenced run-

[1] Les Villes d'Hiver de la Méditerranée, p. 473. Paris: Hachette, 1864.

ning to the city of Columbus, Americans invariably visited the Riviera by way of Paris. And that meant getting down to Nice and Monte Carlo, or at most to Mentone, the entire Italian Riviera remaining unexplored territory. Should these boats continue to run, which is more than likely, the easiest way for American invalids to reach the Riviera in future will be per steamer to Genoa, and thence by rail along the Italian coast to France. Naturally, a large number of German physicians have established themselves at San Remo, and one of their number, Dr. Rieth, has just published a really useful work of the town, showing its indisputable merits as a health-resort.[1] Moreover, unlike most authors who have an axe to grind, this physician is not afraid to tell the truth, and boldly mentions some of the evident drawbacks of San Remo, as well as of the Riviera in general. From this work it appears that something like twenty-five per cent. of the winter visitors at San Remo are Germans. The following tabulated figures show this:

German and other Winter Visitors at San Remo.

Season.	Total Number of Visitors.	German Visitors.
1883–84	8,166	1,408
1884–85	3,755	602
1885–86	8,390	1,537
1886–87	5,523	1,083
1887–88	11,479	2,980
1888–89	17,567	4,356
1889–90	13,803	3,048

A German church, a German hospital, established in 1890 and called the "Kaiser Friedrich Krankenhaus," a German medical society, a German consul, German shops, drug-stores, boarding-houses, and hotels, all proclaim that the Teuton is more at home here than at any other resort on the Riviera. But I am not sure that, in spite of all this and the forced affiliation of the triple alliance, the lavish American or bargaining Briton is not just as warmly welcomed by a singularly obliging and undiscriminating people as any thirsty German ever is, even if he does part his hair in the middle all the way down to where his stiff neck is cemented on to his stiffer back. But since Russians are also found at San Remo, and as even Turks, Tartars, and Texans have occasionally made their winter home there, the international pretensions of the town may be said to be amply vindicated.

Like so many Riviera towns, San Remo is picturesquely situated on several slopes running down to a beautiful bay. The bay forms an inlet of the Gulf of Genoa, and where the new town stands it is shaped somewhat like an elongated S. The new mole which protects the shallow little harbor projects like a hook into the sea. The larger bay, extending beyond the city limits, stretches out for over four miles, with four minor indentations, in the shape of a graceful crescent. The eastern boundary is formed by a bold headland called Capo Verde (350 feet), while the western extremity is marked by the still higher headland of Capo Nero (800 feet). Hills and mountains rise from these promontories, protecting the town almost as effectually as Ospedaletti is sheltered. Monte Bignone towers up back of the city to the height of 4,270 feet. The hills are green with olive-trees, firs, pines, and large chestnut trees, so that the peculiar splendor imparted by a barren background of bare rock, as at Monte Carlo and Mentone, is not here seen, where a softer character is found in all the lovely landscape.

San Remo faces southwest. It lies about thirty-one miles in an easterly direction from Nice, sixteen miles from Mentone, and eighty-five miles west of Genoa.

The encircling hills which give protection to the town merit a somewhat more detailed description, which I borrow from Dr. Hassall: The first sheltering barrier is formed by a series of seven hills, intersected by valleys, through which flow small streams, or, as they are here termed, torrents. These valleys run from north to south and terminate in every case on the sides of the mountains in blind extremities. This first barrier of hills is succeeded by the range of mountains already referred to, (*i.e.*, those starting from the headlands of Capo Verde and Capo Nero). These are not thrown up into sharp, jagged peaks as at Mentone, but form an unbroken protecting chain and are mostly fir-clad. Behind this second range lies a third, the Alpes Maritimes, with an elevation of seven thousand and even eight thousand feet; these, however, are not visible from the town itself. Thus San Remo is enclosed and protected by a triple barrier of hills and mountains.

The biting north winds and the dreaded mistral are, therefore, never *severely* felt at San Remo. But to say that they are quite unknown there is a wilful misrepresentation. During my stay at San Remo, a period of several weeks, I was treated to dusty and violent east winds, which were almost as disagreeable as the true mistral. Nevertheless the general mildness of the winter climate at this place is amply shown by the luxuriant semi-tropical character of its vegetation. There is no doubt that the triple rampart of its encircling mountains gives it such substantial protection, because the hills are not here cleft by deep gorges and wide, open valleys, as is the case at most of the resorts on the Riviera.

Through the kindness of Dr. Hassall I am able to present to the readers of the Record reliable meteorological data concerning San Remo, based on eleven years' consecutive observations by that careful observer.

[1] San Remo, eine deutsche Winterkolonie. Von Dr. R. Koerner, neu bearbeitet von Dr. C. Rieth, K. Badearzt in Bertrich (Moselthal). Leipzig: Otto Wigand. 1892.

Table Showing the Winter Season Climate of San Remo.

	Season.[1]											
Temperature.	1879–80.	1880–81.	1881–82.	1882–83.	1883–84.	1884–85.	1885–86.	1886–87.	1887–88.	1888–89.	1889–90.	*Mean of 11 years.*
Mean shade temperature	52.00	54.30	54.40	52.88	53.08	52.72	52.82	52.30	49.61	52.02	52.23	52.63 Fahrenheit.
Mean maximum shade temperature	57 69	59.70	58.60	56 91	57 09	56.62	56.86	56.10	54.87	56.28	57.05	57.15 Fahrenheit.
Mean minimum shade temperature	45.76	48.60	48.17	46.76	48.07	46.08	46.32	45.14	45 28	45.83	45 80	46.53 Fahrenheit.
Times shade temperature reached freezing	6	0	0	0	0	0	0	1	0	0	2	0.9
Mean minimum temperature on ground	.....	44.80	.... ..	39.53	42.82	38.44	40.77	38.60	.....	39 88	.....	40.69 Fahrenheit.
Times of freezing on ground	.....	3	0	20	4	29	13	34	12	26	12	15
Snow fell	1	0	0	2	0	0	0	0	0	0	3	
Sun and Sunshine [2]												
Mean sun-heat by naked thermometer		73	72	[illegible]8								*Mean of 9 years.*
Mean sun-heat in vacuo	119	.....	115	105.06	108	108	106	105.05	.....	105	.....	109 Fahrenheit.
Days on which the sun shone	166	160	167	160	171	163	162	166	.....	157	.....	164 days.
Mean sunshine per day, in hours and minutes	8.05	7.18	8.27	6.23	7.07	6.51	5.30	5.50	.....	6.12	.....	651 hours.
Total sunshine, in hours	1,331	1,177	1,412	1,171	1,290	1,242	999	1,255	.....	1,114	.....	1,221 total sunshine.
Rain, Rainfall, and Relative Humidity.												
Days of rain [3]	27	43	18	33	25	38	42	30	52	40	31	*Mean of 11 years.* 34 days of rain.
Hours of day rain	117	81	101	132	91	140	137	134	239	174	145	141 hours of day rain.
Total rainfall in inches	13.20	16.64	15.27	17.27	10.14	11.21	11.29	23.54	24.45	.....	17.90	16 total rainfall in inches
Mean relative humidity [4]	67.80	68.70	72.80	71.20	71.00	69.36	71.73	68.62	71.60	71.34	68.94	70.28 relative humidity.

[1] The season lasts from November 1st to April 30th. [2] In the first three years, the mean sun-heat in air and in vacuo is based on the days on which the sun actually shone, but in the following years it is spread over all the days of the season, even those on which the sun did not shine, hence a lower mean is shown in the eight later years. [3] Every day on which as little as the $^1/_{100}$ of an inch of rain fell is counted as a rainy day. [4] Based on three daily observations, at 9 A.M., 9 P.M., and 3 P.M.

No better idea can be formed of the salubrity of the San Remo climate than through a study of its vital statistics. The authorities placed at my disposal all their official records and in every way seconded my efforts to learn the truth. I cannot but express my admiration for the very complete and painfully accurate system now in vogue throughout Italy, of recording every detail likely to be useful for the compilation of statistical tables. Among other things the official records cover all matters of moment to the general health of the public. At my request, and through the courtesy of Cav. Alessandro Escoffier, the following table was specially prepared, a glance at which affords ample evidence of the healthfulness of the native population.

Table of Deaths at San Remo. (From January 1, 1881, to December 31, 1891.)

Year.	Permanent Population.	Single.			Married.			Children.			Total, including Foreigners.			Foreigners.			Natives.			Death-rate per 1,000.
		Males.	Females.	Total.	Males.	Females	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	
1881	16,189	126	85	211	55	51	106	16	25	41	197	161	358	25	13	38	172	148	320	19.75
1882	16,200	102	95	197	59	56	115	24	39	63	185	190	375	16	12	28	169	178	347	21.30
1883	16,395	187	114	301	45	52	97	33	44	77	265	210	475	21	13	34	244	197	441	26.91
1884	16,496	109	84	193	59	45	104	21	32	53	194	150	344	20	12	32	174	138	312	18.91
1885	16,590	156	103	259	57	45	102	39	40	79	247	193	440	24	7	31	223	186	409	24.65
1886	16,615	130	98	228	38	41	79	24	34	58	192	173	365	27	4	31	165	169	334	20.10
1887	16,704	98	108	206	59	34	93	21	44	65	183	181	364	26	7	33	157	174	331	19.81
1888	16,974	91	72	163	58	35	93	17	33	50	166	140	306	19	7	26	147	133	280	15.90
1889	17,376	121	113	324	62	43	115	21	34	55	204	191	395	30	11	41	174	180	354	20.37
1890	17,642	104	101	205	86	39	125	33	41	74	187	165	352	28	17	45	159	148	307	17.34
1891	17,680	93	65	138	67	28	99	33	44	77	194	141	335	13	5	18	181	136	317	17.92

It is unnecessary to burden this letter with a lengthy study of mortuary statistics. But the following condensed table of the principal causes of death for last year, which represents a fair annual average, may prove instructive.

Table Showing Causes of Death at San Remo for the Year 1891.

	Number of Deaths.
Respiratory organs[1]	138
Digestive organs	52
Nervous system	42
Organs of circulation	21
Zymotic diseases[2]	15
Senile marasmus	19
Premature birth	8
Constitutional affections[3]	8
Suicide and dentition each	1

Infant mortality is large at San Remo, but this circumstance has no bearing on the health of the foreign winter colony. On the other hand, the undue proportion of diseases of the respiratory apparatus will convey its warning to the stranger, who should never fail to neglect obvious precautions on the Riviera. Pneumonia is of such relatively frequent occurrence that one feels tempted to assign to that malady a place among endemic infectious diseases. Be this as it may, there is no doubt that the prevalence of dust-laden high winds, and the frequent change from hot to cold, are favoring factors in the development of all acute respiratory troubles. There is little zymotic disease at San Remo. Dr. Freeman, who has built up a large practice here, informs me that in twenty-two years he has not seen a single case of diphtheria at San Remo. Other practitioners have made similar statements to me, and there is but one opinion among foreign physicians, namely that the place is essentially a healthy one. Scrofulous and tubercular diseases, more particularly phthisis, are comparatively frequent. But when it is remembered that tuberculosis has been so largely imported by strangers, including native Italians, it would be quite unjust to attribute it to climatic or local influences of an unfavorable kind. I believe the visitors to some extent prejudicially affect the health of the natives, and not *vice versa*, as has been claimed by some medical writers.

The death-rate of San Remo is certainly low, but Dr. Hassall, believes it ought to be lower. This well-known author, who since many years is a winter practitioner at San Remo, has published the most comprehensive and accurate work [1] on that health resort extant. In a note relative to sanitary and other local affairs, kindly addressed to me, he is emphatically of opinion that, with improved sanitation, the death-rate of San Remo ought to be "reduced to something like 10 or 12 per 1,000. The mortality of many of the towns in England, with a very inferior climate and with arrangements still far from perfect, does not exceed 12 to 15 per 1,000."

Just beyond the Campo Santo, the well-kept cemetery, the local Cremation Society have recently put up their attractive little building, containing a modern furnace (Venini system). A better argument for sepulture by cremation as the future method of disposal of the dead need not be sought for than the contrast afforded by this space-robbing cemetery, and the economical arrangement of suitable urns containing the remains of the departed in far less repulsive shape than any earth-covered coffin can ever hold. Cremation need never be made antagonistic to the last ceremonial rites imposed by the church. The San Remo Cremation Society already numbers one hundred and fifty members among the leading citizens of the place. Sir Spencer Wells, who is, I believe, the President of the British Cremation Society, expressed his entire approval of the arrangements existing for the expeditious and odorless accomplishment of incineration. The gasogenous Venini system, by which the body is exposed to the direct flames of intensely hot hydrogen compounds, appears to answer every purpose. The work is done in less than two hours.

The city of San Remo, fully alive to the importance of preventing the spread of contagious diseases, is now erecting a spacious public disinfectory. In every case of contagion, whether occurring in hotels, lodging houses, or villas, the entire clothing outfit, linen, bedding, etc., are to be sent to the disinfectory, where they will be subjected to the action of super-heated steam, applied in the efficient manner devised by modern science. Should any hotel-keeper refuse to comply with the ordinance now in force, the authorities have the right to peremptorily revoke his license. Every health resort would do well to introduce similar apparatus for the greater safety of the public. The expense of construction could be covered by small fees exacted for the use of the hot chambers.

[1] Under this heading there were reported 39 deaths from tuberculosis (phthisis), including 16 occurring in foreigners.

[2] Four deaths from small-pox (cases said to have been imported from France), 3 from croup, 3 from influenza, and one from measles are noted under this head.

[3] Five cases of carcinoma, *i.e.*, a large proportion.

Saint Saviour's Sanitarium for Inebriate Women.—This is an institution recently incorporated for the treatment of women addicted to the excessive use of alcohol, opium, cocaine, or other narcotics. It is under the charge of the Sisters of St. Mary, and is situated at Inwood, on the northern end of Manhattan Island.

[1] San Remo and the Western Riviera Climatically and Medically Considered. By Arthur Hill Hassall, M.D. London: Longmans, Green, & Co., 1879, and San Remo, etc. London: 1883 (a new edition of the above and more exclusively devoted to San Remo).

New Instruments.

AN IMPROVED IODOFORM BOX.

By CEPHAS L. BARD, M.D.,
VENTURA, CAL.

A STRICT compliance with the requirements of an antiseptic dressing demands that iodoform, when used, should reach the wound in a sterilized condition. Applied with a brush, sprinkled from boxes or jars, through a covering of antiseptic gauze, or sprayed by powder-blowers, its use is to be deprecated, as neither during its storage nor in its distribution, is the powder sterile. From an æsthetic point of view, such employment is also objectionable, being lacking in neatness and precision.

Far superior and preferable is the application of this and similar powders by means of the well-known Gerster iodoform box, which can be readily sterilized, and with precaution will retain its contents, if rendered so before introduction, aseptic indefinitely. From it, however, the powder, issuing through its cribriform distributing plate, in an unvarying circular stream, cannot be regulated to conform with the needs of the varying forms of wounds, sores, and ulcers.

I wish to call the attention of the profession to a device of my own, an improvement on the box just mentioned. Its output can be accurately adjusted and made to assume linear and annular forms, so that it will adapt itself to a sutured incision or to a circular ulcer.

By reference to the illustration it will be seen that, so far as its upper portion, or top, is concerned, it does not differ from the Gerster box, being provided with a circular cribriform distributing surface, protected, when not in use, by a screw-cap.

A radical difference will be noticed, however, in its lower portion. The bottom is open for the purpose of filling, and is covered by a screw-cap. The periphery of the lower portion of the box, or barrel, is pierced by equi-distant cribriform openings, rectangular and circular in shape. Rotating on this portion is an annular collar, or ring, furnished with but one circular opening. Ordinarily, the circular opening of the rotating collar rests between two of the cribriform spaces beneath, and rotation of the band is prevented by the lower screw-cap bearing normally against its lower edge. So arranged, leakage of the contents is impossible.

When required for use, a turn to the left of the screw-cap permits rotation of the collar, and an alignment of its circular opening with those beneath, secures an outpour in the desired form and quantity.

When a large application is indicated, the upper distributing plate, as in the Gerster box, is called into requisition.

Those Thirty-two Bites.—Dr. Lauder Brunton, in the course of a recent lecture on "Mastication," at St. Bartholomew's Hospital, made use of the following remarks: "I think it was a magnificent stroke of genius on the part of the President of the Royal College of Physicians, Sir Andrew Clark, when he informed Mr. Gladstone that he had one mouth and thirty-two teeth, and that for every mouthful of food he took every tooth should have a chance, so that he should take thirty-two bites to every mouthful. And," continued Dr. Brunton, "if the patient has lost some of his teeth, he should allow two bites for every missing tooth, and even that will not always do if many teeth have gone."

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending August 6, 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	29	9
Scarlet fever	46	3
Cerebro-spinal meningitis	3	7
Measles	193	15
Diphtheria	55	21
Small-pox	7	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0
Mumps	0	0

An Ancient Epigram and a Modern Instance.—The *British Medical Journal* states that one of the physicians of the Glasgow Western Infirmary objects to his patients being handled on cold mornings by students having cold hands. In order to call attention to this evil, complained of anciently by Martial in his epigram to Symmachus, his physician, the Glasgow professor offered a small prize for the best translation of Martial's epigram:

> Languebam; sed tu comitatus protinus ad me
> Venisti, centum, Symmache, discipulis.
> Centum me tetigere manus Aquilone gelatæ.
> Non habui febrem, Symmache; nunc habeo.

The committee has decided that two of the translations are equally good. One is by Mr. J. F. R. Gairdner, after the manner of Burns:

> Smart cam' ye, sir, to me na weel,
> A hundert students at your heel;
> A hundert hauns did ower me feel
> Wi' Boreas blue.
> I had nae fever then, but, deil,
> I have it noo.

The other rendering, by Mr. J. F. Gemmill, reads:

> I lay in number twenty-one, a case for rest and tonics,
> And good old G—— came round to me with all his train of chronics;
> A hundred meds., with fingers blue, palpated me like Lister,
> And now, no longer weak and cold, I'm frizzling like a blister.

Pretty poor translations both.

The Doctor as a Debtor.—There is a good deal said in medical journals about the doctor's bills and the hard time he has to collect them. It seems that there are doctors who are debtors, and who are not very responsive to just monetary claims upon them. We are rather glad that the Cleveland boy, as narrated below, got the best of his debtor. The boy in question had as a customer a certain South Side doctor. When the physician's bill reached $1 the boy presented it. It was hard to collect. The boy called several times, but the doctor never had the dollar. The physician moved away and the lad lost sight of him for a time, but finally located him on the West Side and renewed his attacks. At last one day he told his mother he would make one more effort, and then if that were not successful he would give it up. Accordingly he went to the doctor's office and found the doctor out. But inside the door hung the customary slate. On it the boy wrote. "Call at —— Street, William Smith." The doctor called and the boy saw him coming up the street. He told his mother what he had done, and said: "Now, I will go and hide, and you can show him the bill." "I will do nothing of the kind, Willie Smith," said the lady, "and you ought to be ashamed of yourself." A young lady visitor in the family thought more of the scheme and, confronting the doctor at the door, presented the bill. The professional man said that the joke was on him, paid the dollar, and went away laughing.

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WINTERING IN EGYPT.

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THERE is probably no other country in the world so delightful as Egypt for a winter sojourn. It is equally fascinating for the traveller in search of recreation and for the invalid in quest of health. One is placed in an environment at once tonic to the mental and physical organization. The western mind, whether healthy or morbid, is certain to be both pleasantly impressed and deeply stirred on beholding strange races, curious costumes, oriental manners and habits, Saracenic architecture, a land of deserts, oases, palms, and the river Nile, a land abounding in magnificent monuments of an ancient civilization, and over all of which hangs unchangeably a vivid, cloudless, splendid sky. Change in itself is always a tonic, strong in a direct ratio to the amount of novelty, and where this therapeutic agent is indicated in its most powerful form, Egypt must be the prescription.

For the invalid Egypt has remedial qualities which are entirely her own, and not to be found elsewhere, modes of life which are restful, peculiarities of climate which are unique. It must be taken into consideration, too, that this desirable resort is not so far from our shores as it may seem, and that the time of travel is being gradually reduced. Alexandria is five or six days from London. It is but twelve to fourteen days from New York (North German Lloyd to Genoa eight to nine days, rail to Brindisi one day, P. & O. steamer to Egypt three days; or, to Paris eight days, rail to Marseilles fourteen hours, French packet to Alexandria four to five days.

Egypt is a narrow green ribbon of land, with the Nile, not as broad as the Missouri River, flowing through it, and endless stretches of desert on either side. These thousands of square miles of barren dry sand rob the air of most of its moisture, dissipate clouds and prevent rains, and completely sterilize the atmosphere of pestiferous germs.

The climate of the Delta is not treated in this article, because no part of it can be considered a health-resort for Americans or Europeans (many residents of Egypt spend their summers at Ramleh or Alexandria), and because it differs materially from the rest of Egypt. For instance, Cairo, which lies at the upper angle of the Delta, has twelve rainy days in the year, while at its other extremity, Damietta and Alexandria, rain is still more frequent.

Interesting and charming as Cairo is to most people, it is not here that the invalid should take up his winter residence, although he may make it his headquarters from which to depart on his various excursions. The general sewer system of Cairo is in very bad condition, but those of most of the hotels are good. The mortality of Cairo is extraordinary, almost equal to that of Madras. The Cairo death-rate is 46 in 1,000; Madras, 48; Paris and Berlin, 23.50; London, 17.4. In winter one may spend some very miserable, cold, damp days in Cairo, for the hotels are rarely provided with means of heating the rooms, and few of them have a sufficiency of chambers with a southern exposure. I experienced about Christmas time, last year, four most uncomfortable rainy and cold days in succession in Cairo, and suffered more from it than one winter month in Florence, some years ago, treasured up as one of my bitterest memories of disillusion in sunny Italy.

Season.—The season for tourist or invalid is the seven months from October to April, inclusive, but one may remain through May without discomfort. The other months are objectionable because of the heat and the inundation of the Nile.

The seeker after health has one of three courses open to him on reaching Egypt. He should either go into winter quarters at Helouan, Gizeh, or Luxor—take a dahabeeyeh voyage up the Nile for three or four months, or go on camping excursions in the desert. This last suggestion will be a novel one, I think, to the European physicians who send patients to Egypt and to the physicians residing there, but it was very apt to occur to an American physician, familiar with some of our tent hospitals and the benefits to great numbers of invalids, especially consumptives, of camping trips in our Rocky Mountain regions. Camping has advantages in Egypt, too, that are never to be obtained in America, the absolute certainty of warm sun and rainless days, and the means of carrying any quantity of necessities and luxuries in the way of edibles and household furniture.

Before describing specifically these courses, however, it will be well to consider the climatological features of Egypt in detail. Most of the observations at our command have been made at the Khedivial Observatory at Cairo, and while these answer fairly well for Helouan and Gizeh, which are in the immediate neighborhood of that city, there are unfortunately no elaborate records as yet available to throw light upon the climatological conditions at Luxor, four hundred and fifty miles farther south, or out in the desert at various distances from the Nile Valley. Dr. F. M. Sandwith, of Cairo, in his admirable book, "Egypt as a Winter Resort," has made a careful study of the observatory records, and also of such others as have been communicated by physicians in their journeys up the Nile, and to this book I am mainly indebted for the following statistical facts as to the Egyptian climate—where it seemed to me advantageous for the reader. I have introduced figures for comparison with other health-resorts.

Elevation above Sea-level.—Helouan, Gizeh, Cairo, 100 to 200 feet; the Mokattam Hills, just back of Cairo, 600; Luxor, 292.

Temperature.—The Cairene isothermal line runs between Algiers and Santa Cruz, and Florida and Canton. Freezing-point is never reached in Cairo, but absolute minima of 35° and 36° F. were noted on two nights in January, 1887 and 1888, respectively. The desert is sometimes piercingly cold at night, as I found in a camping trip to the Wadi Natroon. Water in a shallow dish will occasionally freeze on exposure to a desert night wind. The thermometer readings for the seven seasonable months may be best judged by reference to the following table (Fahr.):

	Mean of Maxima.	Mean of Minima.	Mean of Means.
	Degrees.	Degrees.	Degrees.
October	84.0	64.8	74.3
November	74.2	56.3	64.4
December	67.7	50.4	58.4
January	61.4	46.6	53.6
February	65.3	48.8	57.0
March	73.2	53.0	62.8
April	81.2	59.9	70.4

Rainfall.—Cairo, a trifle over one inch annually, distributed over twelve to fifteen days of the winter months. The same figures for Helouan and Gizeh. At Luxor it is not quite true, as has been facetiously stated, that "it rains only once in 4,000 years," but rain is so rare a phenomenon that the date and duration of a shower are carefully recorded, not only by Luxor residents, but by transient travellers, as an extraordinary experience. Showers were noted once in 1878, once in 1882, once in 1887; and Dr. Boase remarked a three-minute rain in 1888.

It is interesting to compare statistics as to the annual rainfall in various resorts, although this is not as important as to ascertain the number of cloudy and rainy days at any health station during the season.

	Annual rainfall in inches.	Number of rainy days during seven months; winter season.
Luxor	Minute fraction of inch, if any.	Usually none.
Cairo	1	12
Hyères	33.50	32
Algiers	32	71 (six months)
Pau	43	50 (six months)
Nantucket	45	91
Aiken	46.48	41 (six months)
Jacksonville	55.93	72
Denver	11.41	39
Los Angeles	13.13	45
White Mountains	50	87

Dew.—In Lower Egypt, along the Nile, and in the desert near the Nile, dews are always present, so that walking in the green fields at night, and up to nine o'clock in the morning, is unpleasant. At Luxor and the First Cataract, dew is almost unnoticeable.

Humidity.—The most valuable feature of the Egyptian climate is its dryness. At Cairo the relative humidity is least in June (44), and the annual average relative humidity is 58.4; but for the seven months during which Cairo is frequented by invalids, the average is higher, 63.2 (London over 90 in winter). This I base upon Dr. Sandwith's table from the Observatory records for five years. It must be remembered that this Observatory is situated near the river and at the apex of the Delta. Often, even at Cairo, the humidity on individual days is phenomenally low, for instance, down to 3 one day in April, 1887, and once 4 in March, 1888. These figures apply also to Helouan and Gizeh. As regards the humidity at Luxor, there are as yet but few figures at command, but from such as have been taken, we learn that the air there is much dryer than at Cairo, the average being twelve to fifteen per cent. less. Thus far no observations as to this important particular have been made in the desert proper, remote from the Nile. Undoubtedly there the humidity is still less, probably the least of any place in the world, and it is to be hoped that desert records will ere long be made. The following table will illustrate the difference in mean annual humidity of various places in the world.

Luxor	50.5	Asheville, N. C. (Gleitsman),	70.10
Cairo	58.4		
Greenwich	87.0	Mt. Washington	86.00
Algiers	70.7	Florida (Jacksonville)	68.00
New York	73.0	Adirondacks (Skinner)	70.5
Aiken (Geddings)	64.04		

Air-pressure.—The barometric readings at the Khedivial Observatory for five years, show an average of 29.86, never above 29.99 in any month. Comparing this mean air-pressure with some other health-resorts, we have:

Cairo (Sandwith)	29.86
Nice (Collier)	29.60
Hyères (Cormack)	30.16

Clouds.—Not infrequent at Cairo. In the desert and at Luxor, almost unknown.

Winds.—The prevailing wind at Cairo is from the north; in January, however, from the southwest. The average force in miles calculated by the anemometer is 2.9 for the year, but for the seven winter months it abated to an average of 2.3.

At Luxor the prevailing winds from November to March, inclusive, are southwest, northeast, and northwest, and the average force in miles for these five months is exceedingly low —.9.

None of the winds in Egypt are uncomfortable or dangerous, like the föhn, mistral, sirocco, and solano, of some other resorts, with perhaps the exception of the khamseen. Khamseen is the Arabic word for "fifty," and the wind is thus named because it is apt to blow during some of the fifty days following Easter Monday. The number of khamseen days in a year varies from 4 to 20. It blows for three days as a rule, but may continue longer. It is very dry and hot, and the air is commonly loaded with fine sand. It comes from the south or southwest. I experienced one day of the khamseen in the Lybian desert while travelling by camel in a small caravan, in January last, but did not find it very uncomfortable. According to Dr. Sandwith, "the general effects are a little excitement and stimulation of the system, a more rapid succession of ideas, and increased action of some of the functions, followed by listlessness, headache, and languor."

Water-supply.—The water of the Nile, or of wells in the Nile Valley, is, of course, used altogether by the residents. Visitors often drink nothing but bottled waters, such as Apollinaris and Giesshübler, but with proper filtration there is no water in the world superior to Nile water for drinking purposes. The Cairo water company filters its water. Every dahabeeyeh and steamer on the river, and every house in Cairo, and other large towns, is supplied with huge earthen jars, through the bottom of which the water filters pure and glistening drop by drop. This is on the same principle as the Pasteur filter now coming into general use in America and elsewhere, and it answers the purpose perfectly. It is needless to say that unfiltered water should never be drunk in Egypt.

Prevailing and Uncommon Diseases.—Diarrhœa is common among the natives, and visitors occasionally suffer from it unless they are duly cautious as regard warm abdominal clothing. Typhoid fever, typhus, measles, and relapsing fever are not infrequent in the overcrowded and filthy native quarters, and there are some forty deaths from small-pox in Cairo annually. Diphtheria prevails to a certain extent. Scarlatina, whooping-cough, and mumps are very rare. Pleurisy, bronchitis, and pneumonia are frequent, but only from a careless exposure at night; for the night is often a strong contrast to the day in point of temperature. Malaria in a mild form is frequent along the river in the warm months.

Consumption is almost unknown. The Egyptians seem scarcely ever to have it, but the blacks from the far South (Nubia, Abyssinia, Soudan), on coming to Lower Egypt, which is damp and cold in comparison with their native land, are subject to it.

Entozoal disorders are common, and I saw several cases of anchylostoma duodenale with Dr. Sandwith at the Kasr-el-Aini Hospital. Ophthalmia as is well known, is extraordinarily prevalent in Egypt, and has been for thousands of years, but foreigners seldom suffer from it. Sunstroke is rarer than one might suppose, and the remarkable precautions taken by some tourists to protect their heads are quite unnecessary.

Acute rheumatism, gout, and rheumatoid arthritis are practically unknown in Egypt.

I was myself especially interested in insanity and nervous diseases among the Egyptians. Elsewhere I have called attention to the phenomenal rarity of insanity and the entire absence of paralytic dementia among the Egyptians.[1] Egypt, with six millions inhabitants, has but

[1] Insanity in Egypt, by Frederick Peterson, MEDICAL RECORD, May 21, 1892.

one asylum, containing two hundred and fifty inmates, whereas New York State, with the same population, has over fifteen thousand insane in its numerous asylums.

I observed several cases of chronic poliomyelitis, and numerous infantile spastic paralyses, most of them making a living by begging through the streets or around monuments and tombs. The climate of Egypt is so favorable, and food so cheaply and easily obtained, that such cases as would with us be put into hospitals for incurable diseases, here live out-of-doors, sleeping where they like, and satisfying their hunger with a piece of native bread thrown to them, and an onion or two taken from a neighboring field. Wherever I would go I found it easy to establish an out-of-door clinic, for as soon as it was understood that I was a physician, my tent or boat would be sought by any number of applicants for medical advice and drugs.

Diseases Improved and Cured by the Climate of Egypt.—This climate is invaluable in all manner of chronic diseases of the respiratory organs; for delicate lungs or incipient phthisis, for rheumatic affections, for convalescents from any acute disease. As Dr. Sandwith aptly remarks, the most important question really is to determine what kinds of patients *not* to send to Egypt. As to this, each consulted physician must decide upon the merits of individual cases. It is almost needless to say that moribund phthisical patients, or invalids with apoplectic tendencies, should not be sent to Egypt.

There is no doubt that a voyage on the Nile, or a residence in Cairo, Gizeh, Helouan, or Luxor, or camp life in the desert, is a valuable indication in many forms of nervous and mental disease, such as neurasthenia, insomnia, over-work, hypochondriasis, hysteria, melancholia simplex, and other mild forms of incipient or threatened insanity. There is no better climate for intractable rheumatic and malarial neuralgias, sciatica, and the like.

Having given these preliminaries, it now remains to consider briefly the means of taking the best advantage of what Egypt offers to invalids.

Gizeh, Helouan, Cairo.—On reaching Egypt one disembarks at Alexandria preferably (though one may also land conveniently at Ismailia), and then makes his way by rail at once to Cairo, where he takes a sunny room at one of the good hotels (Shepheard's, Continental, New, or Royal), and prepares his plans for the winter. If a physician is needed there are many good English and German physicians in Cairo.

Gizeh and Helouan are the sanatoria of Cairo. Both are in the desert, and both within easy reach of the city and good medical care.

At Gizeh, seven miles from Cairo, is merely an English hotel (the Mena House) on the edge of the desert, and almost in the shadow of the three great pyramids and the Sphynx. It is as perfect in all of its appointments, sanitary arrangements, water supply, etc., as any hotel can be. Rooms with fireplaces and sunshine can be obtained. Horses, carriages, camels, and donkeys are on hand. A coach runs to the city daily. There is a good library and reading room, billiard-room, tennis-court, golf links, archery and cricket ground, swimming-bath, and a resident physician. The advantages here are the warm, dry, aseptic air of the desert, the quiet surroundings, the nearness to Cairo, and the interesting monuments of antiquity.

Helouan I have described more in detail in another article.[1] It lies fifteen miles to the south of Cairo, and is reached by numerous trains daily in forty minutes. I will say here that the Egyptian railway trains are much superior in point of comfort and speed to most continental trains. There are two hotels at Helouan, and there are a great many pretty villas that may be hired for the season. The village is about three miles from the Nile, and very near the great cliffs of the Mokattam range. The chief attraction here is the sulphur, iron, and saline thermal springs. The baths are well constructed and under European supervision. This is the place *par excellence* for chronic rheumatism and gout. One is really within easier reach of Cairo here than at Gizeh. The desert surrounds the little town. There are the usual amusements of a spa in Europe, and in addition historical attractions—the ancient quarries near by, and the pyramids of Sakkarah and remains of Memphis just across the river.

Luxor.—It has already been stated that Luxor is dryer, warmer, and sunnier than any of the resorts about Cairo. By next season there will probably be trains running the whole distance of four hundred and fifty miles from Cairo, south to Luxor, but at present one takes a sleeping-car to Assiout (twelve hours), and goes thence by steamer or dahabeeyeh. Luxor has two good hotels and an English physician. The town has four thousand inhabitants. Close by are the temples and ruins of Luxor, Karnak, and Thebes. There is postal and telegraphic communication with all parts of the world.

The hotel prices in Egypt are all rather below those charged in most American health-resorts.

These three places, Gizeh, Helouan, and Luxor, are the chief, in fact the only, resorts in Egypt for invalids who intend making, or are compelled to make, a protracted stay in a hotel. I have no doubt that in time other and still better sanatoria will be established in spots still better adapted to make use of the wonderful properties of the desert climate—places perhaps remote from the Nile and its seven inches per month of evaporating water, and which will be desert health-resorts in every sense of the word.

The Nile Voyage.—If there is anything in life which will steal away worries and cares, soothe the tired brain, calm the unstrung nerves, bring back vagrant sleep,

> "Administer to a mind diseased,
> Pluck from the heart a rooted sorrow,"

it is the dream like voyage on the Nile in a dahabeeyeh. At an expense of $600 to $800 per month four people have a house-boat, four bed-rooms, dining-room, sitting-room, bath-room, large deck with awning, captain and crew of eight to ten or more men, cook, waiter, interpreter, and food for all. One may, if one wishes, pay twice as much for the same thing, for there are always tourist companies or dragomans willing to receive it, but it is not necessary, as I have demonstrated by experience. In a dahabeeyeh you are the plaything of the wind, but although I have spent as many as eighteen days on one occasion in traversing a distance of one hundred and eighty miles, owing to contrary winds, there never was a day or an hour that hung heavily on the hands, for there is so much to do and so much to see. Perhaps this voyage has the peculiar and rare quality of making *dolce far niente* appear in its busiest aspect. At any rate, one is so much occupied with something that the weeks pass before one realizes it. This is not the place to describe how this illusion is produced of being very much occupied, when you are in reality resting and imbibing new vitality, mental and physical; books enough have been written about it to dam the Nile, as someone has observed, and to these the reader is referred for further particulars.

As there is no means of heating a dahabeeyeh on cold nights, braziers not being advisable, a Rochester lamp burning in the sitting-room will be found to answer every purpose. An assortment of books, some guns, a telescope, a photographic outfit, and other instruments, scientific or musical, which individual tastes may suggest, will be found useful and agreeable adjuncts to such a trip. The voyage should begin about mid-December and be continued at pleasure for three or four months.

The advantages of the dahabeeyeh voyage over residence in one place are obvious. There are the same climatic features as elsewhere in Egypt. It is like living in one's own home instead of in a hotel. There is change every day, and indeed every hour.

[1] An Ancient Spa, by Frederick Peterson, New York Medical Journal, 1892.

No other river in the world could be travelled in this way. The dahabeeyeh would never be a success upon the Indian River, St. John's, Hudson, or Mississippi. It might be on the Amazon. But all along the Nile are famous ruins, temples, tombs, relics of the world's most ancient civilization, which in themselves excite the interest of every traveller, whether in good or poor health.

The secret of being happy, and at the same time economical, on the Nile is to avoid the Scylla of Thomas Cook & Sons and the Charybdis of the dragomans. Cook's steamers will do very well for the wildly-rushing tourist, who is willing and perhaps able to endure any amount of haste, crowding, and discomfort. The Cook Nile steamers remind one forcibly of the old-fashioned second-rate local Mississippi freight and passenger boats. Invalids should be recommended not to travel by them. A tug to tow the dahabeeyeh is another evil that affords no adequate compensation for its noise and smoke.

Cook & Sons have dahabeeyehs also, their charges being three times what one can be obtained for by application to private owners. The average dragoman asks only twice as much as it is worth. By hiring an interpreter for the voyage and exercising only a little discretion and supervision in purchases and payments, the Nile voyage comes within the means of many people of moderate circumstances whom Cook's prices would otherwise debar from its advantages.

Camping-out in Egypt.—Camp life in Egypt is something luxurious. I have camped out on shooting expeditions in Nebraska, Dakota, and other Western places, and endured hardships that I should not care to experience again. But in Egypt, where labor and carrying cost next to nothing, where everything in the way of furniture and supplies can be stored away somewhere on a camel, where every day can be foreseen to be rainless and beautiful, life in tents becomes a pleasure.

It is always well to have some objective point in view to reach, and among the pleasantest desert trips with tents and camels are those to the Sinaitic Peninsula, to the Natroon Lakes, to the Fayoum, and to several other oases to the west of the Nile. Probably the warmest and dryest for an invalid would be that from Assiout, Geergeh, or Eseh to the Great Oasis. But one may camp on the edge of the desert, travelling southward along the Nile, in that way having the advantage of more interesting surroundings; for some people might find the desert monotonous. For those who enjoy shooting, camping in the Delta or the Fayoum, or anywhere along the Nile affords ample opportunity for the gratification of this taste. There is nowhere in Egypt any very large game; a few wild boar, hyenas, jackals, wolves, foxes, and unattainable gazelles, ibex in Sinai. But this land is the winter home of all the European aquatic birds, apparently, and wild pigeons, snipe, quail, plover, also abound in phenomenal numbers. As for quail, we shot about one hundred and twelve in three hours with three guns, two of us being indifferent shots. We made shooting excursions through the Delta, to the oasis of the Fayoum, and to Wadi Natroon. As an example of the methods of camping here, I will briefly describe our equipment for the trip to Wadi Natroon, where we spent ten days. We were a party of three, and had eight camels with their drivers, a dragoman (interpreter), desert-guide, cook, hunter-guide, and a boy, two tents, three folding bedsteads with mattresses, two folding tables, chairs, rugs, cook-stove, fuel, water, rifles and shot-guns, and provisions for all the party, camels included. Camel-riding becomes easy after a time. One can assume almost any position, even lying down and going to sleep, and one can read with ease. Ladies are not at all debarred from taking such trips. Everything necessary can be procured in Cairo, and the expense should not be over $5 to $7 per day for each traveller.

While we in America frequently enough recommend camp life in the West to certain of our patients, I believe thus far it has never been advised by authorities on Egyptian climate, probably through lack of familiarity with its value and practicability.

Clothing.—Winter clothing should be used in Lower Egypt, autumn clothing in Upper Egypt, and in the desert and on the Nile. Heavy wraps will be found useful at night.

Books.—The best book of reference for the physician and invalid is Dr. F. M. Sandwith's "Egypt as a Winter Resort" (Kegan Paul, Trench & Co., London). The best popular literary book is Charles Dudley Warner's "My Winter on the Nile." Both Baedeker and Murray publish guide books, one of which is indispensable.

THE PATHOGENESIS OF GONORRHŒAL JOINT AFFECTIONS.[1]

By HENRY S. STARK, A.M., M.D.,

NEW YORK.

Without wishing to exaggerate the importance of this form of venereal disorder, it is not claiming too much to assert that of all gonorrhœal complications it is one of the rarest, the one whose pathogenesis is least understood, and the one least amenable to our modern therapeutic resources. It would appear that the results of the activity which now pervades every department of medical thought would supply the information lacking to fill up the *lacunæ* in our knowledge regarding the etiology of blennorrhagic arthropathia, or that recent bacteriological studies would furnish us with the missing data; the fact of the matter, however, is that our hopes in this direction have not been fully, but only partially, realized.

From the time that this subject first engaged the minds of original thinkers until the present day, a number of theories of its origin and of its connection with blennorrhœa have been extant. The discovery, however, of the gonococcus necessarily threw several of these theories out of the field, while it helped to confirm certain others which were based on the investigation of pathogenic micro-organisms.

Ever since the causal relation between gonococci and gonorrhœa has been firmly established, the channels of investigation have been running in one direction; namely, establish the pathological anatomy of blennorrhagic arthritis upon the presence of specific micro-organisms in the secretions derived from affected joints. In the light of our present knowledge, therefore, any theory which does not recognize this genetic correlation must be rejected as being inadequate to the requirements of modern medicine.

Besides the doubtful pathology of this blennorrhagic complication, there are other important and characteristic features connected with the disease, which make the subject under consideration of more than usual interest. Its rare occurrence, its occasional severity, and remote results, such as anchylosis, and hydrarthrosis; its usual recurrence in the same individual with subsequent attacks of gonorrhœa; its occurrence, frequently in the absence of any discoverable tendency to the gouty, or the rheumatic diathesis; its disposition not to respond to the usual antirheumatic agents; all combine to form a complex of phenomena which invests this disease with an air of mystery and misunderstanding hardly commensurate with the amount of labor expended upon the subject.

Not wishing to pass in review the chief episodes in the course of the evolution of our knowledge of this subject, it will be sufficient to state that it is only in recent times that legitimate attempts have been made to account for its pathology. An historical retrospect, however, of this subject brings to light the bare fact that, though this complication was already recognized as early as the sixteenth century, the hypotheses which the earliest investigators advanced plainly demonstrate that they had no conception of its nature. Up to the present day a large amount of experimental work has been done and clinical evi-

[1] Read at a meeting of the Metropolitan Medical Society.

dence has been collected to account for its pathology, and these efforts have resulted in working a revolution in the opinion and practices of the profession. Nevertheless, there are problems connected with the pathogenesis of this complication whose solution has baffled time and men. Why this complication should exhibit an unfortunate predilection for some persons, while others should enjoy a comparative immunity; or why this affection should, in a generality of cases, reappear with its former virulence and intensity with fresh attacks of urethritis, are problems in medicine which are as deep as the Sphinx and as dark as the Sibyl

In 1886, in an Inaugural Thesis upon the "Causation of Gonorrhœal Rheumatism," based upon a personal analysis of some eight cases, I drew the conclusion that septicæmia was the true explanation of the pathological phenomenon in gonorrhœal joint affections. To-day, fortified with a more extended experience and study of the subject, I do not hesitate to adhere, with certain modifications, to the same conviction that the affection is due to the absorption of putrid secretion through the portals of the urethral veins and lymphatics. In other words, I believe that gonorrhœal rheumatism is a metastatic crisis attributable to the translation of the morbific matter from the primary seat of the disease. Now, to establish such a conclusion upon a logical basis the following conditions would have to obtain: Firstly, it would be obligatory to isolate the poisonous principles from the original and from the metastatic sites of the disease, and, secondly, it would be necessary to establish an unquestionable identity as regards the character and behavior of these toxic elements. How far the effort to establish a parallelism between the microbial elements of the primary disease and the complication under consideration has progressed, becomes evident when we pass in review the chief events in the modern history of the affection. We shall then see that the disease and its complication stand in a causative relation to pathogenic bacteria that are similar in size, shape, behavior, arrangement, and color—in other words, are completely identical. The first event was the discovery and establishment upon bacteriological and clinical evidence of the specific poison of gonorrhœa. The second event was the discovery of the same gonococci in the exudates of persons suffering from the blennorrhagic joint complications. There are up to date a number of such discoveries on record. Thus Hall, Wyszemski, Volkman, Smirnoff, Petrone, Horteloup, Kammerer, Hartley, and others, were enabled to demonstrate the presence of gonococci in the pus derived by puncture and incision into blennorrhagic joints. There is, however, still one link missing in the chain of proof to establish the unquestionable identity between the cocci of blennorrhœa and those found in the exudates of blennorrhagic joint affections, and that is the fact that none of the experimenters who found gonococci in the exudates of gonorrhœal joint secretions went so far as to make cultures and inoculations of the virus. When once this procedure has been satisfactorily accomplished there can be no longer any justifiable scepticism as regards the nature of gonorrhœal rheumatism and its mode of connection with gonorrhœa; for then the set of conditions which bacteriologists claim should exist before a specific disease can be attributed to a specific organism, will have been satisfied.

There exists, then, reasonable ground for believing that the toxic elements of gonorrhœa and gonorrhœal rheumatism are identical, but the fact that other pathogenic organisms can be demonstrated in these exudations, namely, the characteristic pus-generating cocci, seems to cast an element of doubt upon the conclusion drawn in this paper. Does, in point of fact, the presence of streptococci in these exudations weaken our argument? On the contrary, I think it furnishes corroborative evidence that my premises and conclusion are logically true; for we know that the favorite habitat of gonococci is within the pus-cells or leucocytes, and that this peculiarity belongs almost exclusively to the gonococci, and represents its main biological characteristic. There is, so to speak, an inseparable connection between gonococci and streptococci. In other words, blennorrhagic processes belong to the category of "mixed infections," and it is, therefore, more than likely that the secondary or complicating blennorrhagic processes belong to the same type of infection. Still another biological feature of the gonococcus, of interest in connection with study of the pathogenesis of this complication, is the tendency of this diplococcus to penetrate the intercellular substance of the mucous membrane, and thus invade its subepithelial structure, where, by coming in contact with the lymphatics, it may find an avenue of entrance into the general circulation, and an avenue of exit into or about an articulation. This penetrating or migratory faculty of the gonococcus is well known, and offers a very reasonable explanation for its appearance in different and distant parts of the body. Now, when we study the life-history of the gonococcus in the living economy on such lines of investigation, we are almost forced, unprovisionally, to accept the conclusion that this organism is the active agent in the causation of the blennorrhagic joint affections. There are other grounds for believing that gonorrhœal joint complications are merely remote localizations of the specific poison of the original gonorrhœa. Thus the study of numerous cases has demonstrated with tolerable certainty that blennorrhagic arthritis is never observed to follow pseudo-blennorrhagic processes such as a benign urethritis or a balanitis.

The pathology of gonorrhœal arthritis differs in no respect from that of arthritic inflammations occuring from other causes, except as far as may be modified by the particular specific poison. There are the same morbid inflammatory products—fibrin, serum, pus, leucocytes, micro-organisms, epithelial, bony, and cartilaginous *débris*, derived from the usual sources, with the same tendency to the formation of plastic adhesions which may permanently and seriously impair the normal functions of the involved joint. There are also the same stages of the inflammation: Firstly, the period of congestion or engorgement, then of exudation, then an organization and moulding of the exudate to conform with the contour of the parts involved. In the favorable cases the inflammatory process terminates by resolution and absorption of the inflammatory products, while in the unfavorable cases the process goes on to suppuration and partial disintegration of the bony and cartilaginous structure. In one set of cases the serum predominates, forming an appreciable hydrarthrosis; in another set of cases the pus predominates, forming a pyarthrosis. In several cases that came under my observation, the articular ends of the bones became thickened after the subsidence of the acute symptoms, and remained permanently hypertrophied, producing an incomplete anchylosis. The types of gonarthritic inflammations conform also to the types of arthritis from other causes, such as the traumatic infectious diseases, septicæmia and pyæmia, or from such constitutional dyscrasiæ as syphilis or tuberculosis. Thus we may have a typical arthritis or a periarthritis of an acute, subacute, or chronic variety, and involving one or more articulations.

It may then be claimed that there are no pathognomonic pathological features peculiar to blennorrhagic joint affections, excepting the presence of the gonococcus, which would in all or even in most cases permit them to be differentiated from joint affections due to other causes. There are, however, certain clinical and etiological factors which permit us to ascribe to gonorrhœal arthritis a special clinical picture that renders the differentiation comparatively easy. The enumeration of these signs or guides does not properly come within the scope of this article. In pursuing the study of the origin and development of gonorrhœal joint affections, I have purposely omitted from the discussion the consideration of certain views, from the conviction that they bear the stamp of

age, and are not based on bacteriological evidence, which, to-day, is the crucial test in pathology. Such views are the "vaso-motor theory," which seeks to explain the complication as a reflex vaso-motor disturbance starting from the original inflammation in the urethra; another view is that the joint complication is simply a coincidence in persons whose systems are depressed by some taint, as the rheumatic or gouty diathesis. In other words, that the simultaneous occurrence of the disease and its joint complication, is merely accidental. It must be very evident, even to the casual observer, that such theories, in the light of our newer knowledge, must be relegated to the realms of antiquity. For experience and experiments go to show that the gonococcus is the determining and decisive element.

In describing the area of infection in a typical case of acute blennorrhœa, we must not think it necessary to stop with the invasion of the urethra in the male any more than we would with the vagina in the female, for there cannot be any doubt that in a very large proportion of cases the process of invasion extends to other organs and tissues of the body. Thus writers speak of blennorrhagic endocarditis, blennorrhagic exanthemata, blennorrhagic ophthalmia, iritis, and sclerotitis, blennorrhagic adenitis. Why this extension should occur in some cases and not in others, I cannot suggest any explanation, except to allude to the varying propensities and vitality of this diplococcus, to the idiosyncrasy of the individual attacked, and to the condition of the soil which harbors the gonococci.

These conditions furnish the inquirer with a clue, and seem also to suggest an explanation for the peculiar immunity on the one hand, and the predisposition on the other hand, of certain individuals. In the absence, however, of sufficient observed facts unanimity of opinion is well nigh impossible.

201 West Fifty-fourth Street.

"PHYSICIAN, HEAL THYSELF."[1]

By C. B. MEDING, M.D.,

new york.

Living in an age universally progressive, it is not a matter of wonder that in the march of erudition the student should be remembered. The desire that prompts the possessor of a fine painting to seek a suitable hanging exists in nature as a principle, and all progression, to be permanent, requires progressiveness for a habitation. Now, the rapid advance of physiology, pathology, chemistry, and therapy demands for its application an equal improvement in mentality. Medicine exacts more than passive affection in its accepted admirer, it must have first equality, and then reciprocal passion.

However sad may be the fact that medical colleges require little or no education in candidates, the truth remains that no calling needs greater preparation; for appreciating the results so ennobling, including as they do that intermingling with many natures in all the secrecies of their innermost life, and that reverence which goes forth unconsciously to the sharer of voluntary confidence, I consider the true physician to hold the highest, grandest, nearest sublime of all professions. I believe that to attain to such position men should be the mental equals, if not superiors, of their race. Some consider the man well versed in a single subject the sufficient professor of the same, but is this right? Emerson says, "We have little control over our ideas, we are the prisoners of ideas; our spontaneous action is always our best; it matters little what we may assert, our final conclusion is, as has been well said, 'a pious reception.'"

I do not care to answer the pessimist's croaking complaint that there is no use seeking perfection; it is not a future possibility I look forward to as a means, but a present existence, namely necessity. There are men who combine in one profession the results of thought in all branches; such men are successful not always personally, but truly, for these are they who leave guiding "footprints on the sands of time." General excellence is a far better and more attainable goal than special perfection.

If asked my idea of medical education in the millennium I would give the socialists' creed, "In that day, man who is unfitted morally, mentally, or physically for its practice will not pretend to it." For years the two callings, theology and medicine, have received the bulk of the indifferent, undecided, mediocre youth of the country. "By the by," says Elder, "is it not a little curious that men are generally regarded best fitted for the practice of medicine who are fit for nothing else?" And why is this? Because of no necessary qualifications. Men are granted an M.D. who can scarcely put six words together grammatically; whose writing is almost illegible; whose spelling is not even phonetically passable. Such may not be unfitted; they may have passed more stringent examinations better than many M.A.'s; but in any case can it be denied that such proceeding is ridiculous, ay more, criminal? True, they may make Galens or Harveys, but what are the chances? where are the examples?

Some journals and many men are to day opposing the State legislation of medicine. I admit it seems belittling, personally I too would object; but is it not due to the community that such legislation be enacted? Under the title of doctor, how many incapable though innocent persons are doing harm? In a country where, so long as a man shows a diploma and affirms to be doing his best, he may commit murder legally, is it not quite necessary that not only the people, but also the reputable physician, should be protected?

Who has not smiled when reading Sterne, Smollett, or Fielding, at the true though unflattering descriptions of medical men? What was the cloak of such characters, what was their success due to? Simply the necessities of others. Dying men catch at straws. Any port in time of a storm.

Before civilization the wild tribe had its medicine man. Before idol or priest came He who relieved: revered, honored, and feared, He was above his people in wisdom. The medicine man has lost ground; though still the necessary frequenter of the homes of the sick, he is a humbug. Is there a way to the higher path, practical and worthy? Let us see. All the greatest men, no matter what their origin or opportunity, have been well grounded in the art and science of their time. Lucretius, Zeno, Epicurus, Aristotle, were wise in general knowledge, and later philosophers, astronomers, theologians, biologists, etc., have been polymathists. If the fathers whose eulogies we sing have not lived in vain for us, if the great who have gone before are to affect existing life for good, it can only be that in the folio of their lives, now widely open, he who runs may read the elements of success.

The thought of the physician should be logical. How can a man draw faithful conclusions whose knowledge of logic is nil?

Success with us hangs on judgment. Judgment and self-confidence go hand in hand despite any effort to the contrary. Judgment demands a keen insight added to a wide range of information.

Strength of opinion comes from but two sources—boldness and knowledge; the first falls before a bolder, but the second can only be augmented, never deposed.

Scientific treatment is based on reliable diagnosis, diagnosis logically obtained. Symptomatic treatment is the white flag of defeat.

Two factors are sure to force the medical profession to higher ground, whether it will or no: First, an universal mental advance. Second, the growing strength of public opinion.

True, there is to-day the sceptic, that strange, unbalanced, ridiculous doubter, believing nothing, accepting nothing, and if the truth could reach him, knowing nothing, being in fact a monster hypocrite. But among men mentality is greater. It would be difficult to find, at the

[1] Read before the New York County Medical Association, October 19, 1891.

present time, persons wearing frogs about their necks to cure disease, or drinking holy water at Pentecost for fever; and while there is still great faith and sale for patent medicines and secret nostrums, we ourselves have done much to encourage it. There is no reason why the various doctors whose names and faces figure on the many well known preparations, should not write and compound as good a medicine as you and I; and the fact that they are labelled useful in all diseases, is but a reminder of many brothers who have found mercury or bleeding or opium a "cure-all." It is useless to deny the tendency of the populace to acquire a knowledge of the specialties.

The motto to be placed over this age is in a word, "inquiry." From the womb to the grave, progressive man is asking questions to which every school of thought must give answer; but in answering, how have we honored ourselves? How have thompsonian, homœopathic, allopathic, vitapathic, eclectic, botanic, Christian science, and faith-curist schools answered it? I will tell you, by exaggeration, by false pretence and promise. We blame these latter, we denounce them, but are they not the parasites that have sucked their life from us? Do we not feed them? Do we not rave over and exaggerate each new notion? While we decry the era of the lancet, are we not founding an antiseptic age? While we ridicule the belief in charms and vapors, are we not establishing a microbe craze? And out of us, out of our extravagant faith in each novelty, rise up the quack and patent medicine of the day.

Public opinion, a consequent and index of public education, affects us in common with all others, by stripping the profession of every unearned honor. The silent, mysterious air is a relic of superstition and ignorance; that dignity and immensity of learning so often assumed is not proven by silence. We should rid the profession of every jot of sham honor gained by the sacredness of confidence and nearness of association, and make morality, wisdom, and character gain for it a noble reverence. Says Doctor CULBERTSON, of the *Journal*, "The province of the physician is to be more a teacher and less a dealer in drugs." The word doctor is fitly applied only to the teacher. The silence of wisdom is not aphony. If the first and highest duty of the physician is prevention, there is no better preparative than teaching. Let me read you a few verses from "The Wisdom of Jesus, Son of Sirach:" "Honor a physician with the honor due unto him for the uses which ye may have of him; for the Lord hath created him. For of the Most High cometh healing, and he shall receive honor of the king. The skill of the physician shall lift up his head, and in the sight of great men he shall be in admiration." Such words were spoken, I need not say, of but one kind of physician.

There is yet a round-faced optimistic individual who, see-sawing with the pessimist, finds satisfaction, content, and even perfection in the present; may I dismiss him with his opposite and seek truth.

Every profession has had to change its basis, not, alas! without the loss of many misled conservatives. Priests are now spiritual pastors, not confessors; lawyers are advisors, not pugilists; physicians must be teachers, not semi-magicians.

No one can estimate the injury intentional magniloquy and unconscious inconsistency have done, the ridicule they have rained upon the profession. They are the dire results of false teaching, the fungous growths springing from the light-soil, didactically taught theory, which is scattered by a host of so-called colleges over that sterile clay, ignorance.

Teaching requires thought, and thought is the hardest task in the world.[1] It is an aphorism that "scientific truth must cease to be the property of the few; it must be woven into the common life of the world."[2] How are we fulfilling the law? I will tell you—by allowing "ignorant credulity"[3] to gain the dangerous state of "a little knowledge." But while medicine is growing into the dignity of a science, we must not forget that it is, always has been, and ever will be, an art. It is an art because it must be thought, and thinking is an art.

In glancing over the past we notice a peculiarity of therapeusis; each science has at some time been its servant, and in that servitude has pushed itself forward. Astronomy leaped when men hunted for stars of destiny; physics found advance in heat, light, water, sound, and to-day in electricity, by exaggerated applications of the same to the body; chemistry is at present devoted to remedy seeking; and the various studies of psychology, philosophy, etc., find their grandest use in application to disease. Then should not the physician be as capable a master as possible remedies are slaves?

Emerson asks, "Who would speak of love or religion to a physician?" A sage has remarked that "medical men are becoming more sceptical and dangerous to the growth of ethical truth." You may deny such assertions; but is it not true that love and hate, spiritual conditions and financial transactions, are in their extremes and perversions equal etiological factors with bacteria? Are not human passions in their ebb, flood, and flow equal causes of morbidity with physical changes? And is it not true that broken or ecstatic hearts through these causes receive little treatment and less sympathy from physicians?

Probably, after this age of bacteriological research, surely some time in the future, will come the age of the study of the human mind. Sometimes it seems to me our posterity, by analysis of the past, will find mental power a great remedy. Some unknown force—mesmeric, electro-magnetic, psychologic, what you will—seems certainly to connect all minds and substances, and strangely enough, those who seem to enter into the sympathetic ego of their patients gain greatest results. Such is possible only through an understanding gotten by universal application and communion.

Every day new discoveries attract the needle of our compass, but as good mariners it behooves us to consider well all the deflections ere we set or change our course. From the days of the ancient Egyptian priests the history of medicine has been one of the rise and fall of innumerable theories and practices; but prior to the time of Hippocrates, changes were not elevated into popular manias; quiet, orderly, and dignified were the changes, teachings, and doings of the fathers.

In lieu of hero worship with its tendency to exaggerate and canonize, we have to-day a specialism not far removed—specialists of a character and number altogether contrary to the best interests of the profession, who know not dignity, not fitness, neither love nor study, but chance, and often personal dislike of remaining branches, makes the selection. What is the result? This, with a fair knowledge of one part is passed an ignorance or theoretical acquaintance of the rest. So gynecologists must examine every maiden; laryngologists must spray every throat; surgeons must operate every furuncle; neurologists see only nerves; oculists, only eyes; aurists, only ears; dermatologists, only and ever, skin. All this to the utter confounding of every principle of an upright calling, treating as they do effects for causes, symptoms for diseases, and forgetting the inseparable connection between each and every part of the anatomy.

It is an age of advance, true, but all progress is not advance. "To advance," says Emerson, "something of the old must forever mingle with the new," and that something, my dear friends, is a thoughtful *résumé*, a brief but particular condensation. For the healing of ourselves, then: A considerate following of present demands; attention to the details of modern research and discovery without necessarily an absolute surrender to the same; a wise moderation in praise; an ability to instruct; an education to prepare us for such duties.

These are the medicines we need, and it is the duty of this, of every society to urge, ay, to enforce, the wholesale manufacture and wide distribution of these remedies, toward the bettering, the elevating, the evening of this no-

[1] Emerson. [2] L. Agassiz. [3] Shakespeare.

ble calling, that they who enter its sacred portals may throw off forever that ancient oath of the Pythagoreans, to impart knowledge of this only to my own sons, teachers, and disciples, and take the new oath of civilized progress, "to acquire, to impart."

We must teach. Therapy is not the open sesame to the glorious heaven of health, but knowledge, not expressed in an incomprehensible terminology, but told in plain truth, knowledge of right and wrong, of habit and surrounding of the Hippocratean trio, "air, water, and places." Such is the golden gate to the throne of true greatness to which we of all men have a God-given right.

132 WEST 126TH STREET.

NOTES ON CONSERVATIVE OBSTETRICS.[1]

BY T. J. McGILLICUDDY, M.D.,

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THAT there are thousands of still-births every year in New York is well known by physicians who have investigated the matter, and all large cities have their proportionate share, as is shown by the records in the departments of vital statistics. Now, what percentage of these deaths is due to destructive midwifery it is impossible to determine, still it is undoubtedly quite large, and most of it is the result of meddlesome interference, followed by bungling operations by men who are ignorant of the rudiments of scientific obstetrics and whose manipulations are commonly fatal to the child and also frequently fatal to the mother. That craniotomy on the living child is still very frequently performed, and but few of the cases reported, is only too true. With the improved obstetrical instruments which I have invented, and which have been described partially in the *American Journal of Obstetrics* for December 1889, and also more fully in the *Journal of the American Medical Association* for August 8, 1891, we can certainly do away with deliberate craniotomy on the living child and leave only to be considered Cæsarean section and Porro's operation. This is, of course, in cases where the opportunity of inducing premature labor has passed. My stronger forceps is to be used in the cases of pelvic contraction of from about three to three and three-quarters inches, where craniotomy has been in times past advocated. When the conjugate diameter is two and one half inches or less and the shortest other diameter three and one-quarter inches, then Cæsarean section is indicated.

We must not forget, however, that cases have been reported where the conjugata vera was but one and one-half inch and still, from the stretching of the pelvic ligaments, or bending of the pelvic bones, or both, nature was able to bring forth a living child before the attending physicians interfered. That the ligaments stretch and the articulations of the pelvis separate is well known, and is shown by the intense pain suffered in the sacral region and the sinking in of this part during delivery. In this month's issue of the *American Journal of the Medical Sciences*, there is an abstract of an article by Hanau in *Fortschritt der Medicin*, 1892, No. 7, in which he reports his observation on the pelvic bones in twenty cases of pregnancy. He found in healthy persons an unusual growth of connective tissue without the deposition of calcareous matter. The bones examined could be cut very easily, but were not as soft as in cases of osteomalacia.

In the rare instances where Cæsarean section is indicated, if the physician in charge is not competent to perform the operation, he can easily call a consultant who can, rather than attempt, as many do, the more difficult and dreadful one of deliberate craniotomy on the living child. Embryotomy is an operation which certainly destroys one life and very frequently two, and is most often performed, where there is not the slightest excuse for it, by men who are excited, whose moral sensibilities are blunted, and who ought to be able to do better work. I do not here intend to discuss Cæsarean section or embryotomy, but simply to give the details of the following two cases and let those present draw their own conclusions:

CASE I.—Mrs. K. M——, very tall and very stout, aged forty. She was referred to me by Dr. Alfonso A. Richardson, of East Eighty-sixth Street and Park Avenue, who stated that it was her fourth pregnancy and that she had reached full term. At her other three labors, owing to some contraction at the brim and the exceedingly large size of the child, none of them had been delivered alive. Her first child was craniotomized by a professor of obstetrics in one of the principal colleges. At the time of her second and third labors, Dr. Richardson, who was in charge, informed her that when she again became pregnant, she should consult him so that he might bring on labor at the eighth month in order that he could deliver her of a living child. She refused to do so, and at the request of Dr. Richardson I took charge of the case.

The patient was at full term, and I immediately, on August 11, 1891, induced labor, and on August 12th, at 1 A.M., finding the cervix had been dilated for a long time, with the head still above the superior strait, and showing no tendency to engage, Dr. Bartlett Gilbert, who was helping me with the case, applied my axis traction forceps under ether. A fair amount of tractile force was employed, owing to the obstruction, but the advantage afforded by the handles of the forceps made the delivery comparatively easy without laceration or other injury to the child's head. The child weighed eleven and three-quarter pounds naked, and the mother stated that it was as large, if not larger, than any of her previous children.

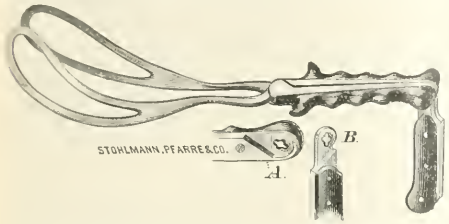
A rather profuse hemorrhage followed the delivery of the child, but this was controlled by gently kneading the uterus through the abdomen. The placenta was exceedingly large and very friable. In about twenty minutes after the delivery of the placenta another profuse hemorrhage followed, which was controlled by pressure on the fundus, the application of ice to the abdomen and inner aspect of the thighs, followed by a hot douche and ergotole injections. The patient felt weak and thirsty, with a pulse of 120 and temperature of 98° F. At 3 A.M. the pulse fell to 100, and the patient continued to vomit profusely for fifteen minutes, when she said she felt very much better. At 8 A.M., pulse, 106; temperature, 98.8° F. August 13th: At 8 P.M., pulse, 80; temperature, 99° F. August 14th: At 8 P.M., pulse, 100; temperature, 98.8° F. August 15th: At 8 P.M, pulse, 100; temperature, 98.8° F. August 16th: At 8 P.M., pulse, 100; temperature, 100.4° F. August 17th, temperature and pulse normal. Moved around in the bed a good deal, nursed baby, and said she felt well. There was no pain or tenderness over uterus; lochia normal; recovery uninterrupted.

CASE II.—A. K——, primipara, aged twenty-eight. Labor began Monday, May 12, 1891, and on Tuesday the membranes ruptured. The following Sunday, having been in labor nearly a whole week, under the care of a midwife and two physicians, she was sent to the Mothers' Home, Maternity Hospital, with a note from the physician in charge, saying that craniotomy would probably have to be performed, and that a hospital was the proper place for her. The patient was in fair condition, and on examining her I found some contraction of the conjugata vera. The head was wedged in a transverse position, which I determined by inserting my hands into the vagina. I adjusted my axis-traction forceps over the face and occiput and made traction until the head came down into the pelvic basin; I then reapplied the blades to the sides of the head and delivered a living child in the left occipito-anterior position. The side of one of the parietal bones was bruised, and there was a small slough at this point, due probably to its constant compression against

[1] Read before the New York County Medical Association, June 20, 1892.

the promontory of the sacrum. Mother and child recovered perfectly.

The advantages claimed for my axis-traction forceps are, that it is simple and uncomplicated; that it is superior to Tarnier's, because axis traction at the superior strait is perfect; that with it one has plenty of power and perfect control; that it is easy to apply, as it takes but a few



Author's Axis-traction Forceps. For the French lock, *A*, *B*, I have in some substituted a metal handle which closes like a knife-blade.

seconds, and that it has a dual character, with all the advantages of axis traction and the ordinary forceps, and thus saves the expense of buying two instruments instead of one. My friends, who have used it for the past three years, are much pleased with it. The stronger form is to be used for moderate compression of the upper portion of the infant's cranium in cases of impaction, and as an alternative for craniotomy in cases of pelvic deformity. Drs. Leischman and Barnes both say that improper instruments are the cause of a great proportion of the unfortunate results, and that what we need is power and control. Now, this instrument certainly gives one both.

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APPENDICITIS: WITH A PLEA FOR LESS SURGICAL INTERFERENCE IN ITS MANAGEMENT.

By LAWRENCE B. YOUNG, M.D.,

Rolesville, N. C.

The reproach of Van Helmont, "that a bloody Moloch presides in the chairs of medicine," seems not altogether inappropriate to a large class of practitioners of the present generation, when we consider the numerous cases reported in current medical literature of appendicitis for the treatment of which laparotomy seems to have swept all other measures from the field. Moreover, a reference to the most recent standard text-books on the management of this affection, restricts almost entirely the function of the physician to the duty of saying when the operation should be performed. While I do not wish to be understood as underrating the wonderful advances made in surgery in recent years, and the invaluable aid thereby furnished the physician in the diagnosis and treatment of disease, I do, however, most earnestly protest against the ofttimes indiscriminate use of the knife in this disease. One of the strongest arguments against this almost universal method of treatment seems to me to be the uncertainty of diagnosis in many of these cases; for while we are told by some high authorities that almost the only local condition requiring differentiation is *stercoral cæcitis*, a very little thought and reflection is necessary to show that there are many other conditions that closely simulate appendix disease, in the elimination of which the most careful and experienced clinicians are sometimes seriously at fault. Among the affections referred to may be mentioned: Acute intestinal obstruction; inflammation of the ovary and connective tissue in its neighborhood; idiopathic abscesses of the venter ilii, or in the course of the psoas muscle; psoas abscess from caries of the spine; renal abscess; and all descending retro-peritoneal abscesses, whether from the interior of the spinal canal, the pleura, lung, or liver. Furthermore, some of the abscesses from the causes enumerated are liable to form communications with the cæcum and still more closely to simulate primary typhlitis, which, as an independent affection, some authors consider as an uncertain and doubtful malady, but which I think occurs more frequently than some would have us believe. Another weighty objection against the prevalent practice of laparotomy is that shown by numerous post mortem statistics, which conclusively prove that a great many cases of the disease terminate in recovery without any treatment having been instituted; and last, but not least, the serious nature of the operation, for we are by no means in possession of all the fatal cases following the operation.

The brief report of a case that I recently had under observation and treatment may not be amiss. About six weeks ago I was called to see a little girl about eight or nine years of age, who had been suffering with pain in the right iliac region, nausea and vomiting, slight fever, and obstinate constipation. Upon examination I found the bowels slightly tympanitic, tenderness in the right inguinal region, elevation of temperature, and upon questioning the mother, found that the bowels had not moved for seven or eight days. I diagnosed the case appendicitis, and administered one-eighth grain of morphine, and ordered hot fomentations to the bowels, and a rectal enema; the morphine to be given in doses of one-eighth grain, sufficiently often to control the pain, continuous application to be made of the hot fomentations, and the enemas to be employed every second or third day. The patient promptly recovered. I told the mother, however, that a similar attack would be very likely to follow over-eating or any error in diet. I was summoned to the same patient a few days ago, and found the same condition, only very much intensified; the abdomen was extremely tympanitic, and the constitutional symptoms were very much more severe than in the previous attack—so much so that I could not satisfactorily eliminate diffuse peritonitis. I instituted the line of treatment previously employed with the most satisfactory results.

After I had begun to write this article I was called to see a young man, twenty-two years of age who three days previously was taken with severe pain in the right iliac region, and whose general appearance at the time of my seeing him was indicative of the most intense suffering. Upon examination I found the whole right flank flat, hard, and board-like to the touch, intense pain being caused by the slightest pressure. McBurney's tender point was strikingly observable in this case, which, together with the fever and constipation, justified me in the diagnosis of appendicitis. I placed my patient on the same treatment employed in the above case, with the exception of larger doses of morphine. Under the treatment employed the severe symptoms rapidly subsided, and the patient became convalescent on the sixth day; but being a little refractory and disobedient to instructions, he suffered a relapse, which, I am happy to say, was satisfactorily and easily controlled, and he is now quite well and at his usual post of business.

These two cases, which are typical of the disease under consideration, which were attended with well-marked and grave symptoms from the outset, both of which suffered severe relapse with augmentation of all the threatening symptoms usually observed, and finally their complete recovery under the medicinal treatment outlined above, is a sufficient justification to my mind for a plea for conservatism in the management of these cases, and no less warrants us in condemning the too frequent resort to an operation which is necessarily surrounded by dangers, numerous and grave, and which often proves fatal in its results.

A Greek Medical Work Two Thousand Years Old.—Mr. F. G. Kenyon, who last year edited the newly discovered papyri of Aristotle and Herondas, describes another similar manuscript which contains an ancient treatise upon Medicine by a Greek author, probably of Alexandria. It was written about 100 B.C.

SPINA BIFIDA—EXCISION—RECOVERY.

By F. J. GRONER, M.D.,

GRAND RAPIDS, MICH.

SURGEON TO THE U. B. A. HOSPITAL, CONSULTING SURGEON TO ST. MARK'S HOSPITAL, AND TO MERCY HOSPITAL.

In the tabulated report of thirty-four cases of spina bifida treated by excision, as given by Dr. C. A. Powers in the MEDICAL RECORD for July 16, 1892, I see notice of a case operated on by myself in 1888 and reported in the American *Lancet* of the same year. The case is now in perfect health. I wish to add another case to the list.

On September 10, 1890, I went to Big Rapids, Mich., and, with the assistance of Dr. Dodge, operated on a child of C. Russell, of Deer Lake, aged seven months. The tumor was small at birth and had gradually increased until at the time of operation it was the size of an adult's closed fist. It was in the lumbar region of the spine and caused a great deal of nervous irritation. Chloroform was the anæsthetic used. Dissection was carried down to the base of the tumor, which was transfixed, tied, and cut off. Leakage occurred; to stop this I passed a hare-lip pin through the stump and applied the figure-of-eight suture. The integument was drawn firmly over the pedicle, and the head of the pin was allowed to protrude from the wound. The pin was removed in forty-eight hours. There was not primary union of the wound, but the child made an uninterrupted recovery. On July 4, 1892, the father reports the child "fat and perfectly healthy."

Both were cases of meningocele.

July 23, 1892.

EXTRACTION OF A SAFETY-PIN FROM THE LARYNX WITH MACKENZIE'S FORCEPS.

By FRANCIS L. PARKER, M.D.,

CHARLESTON, S. C.

On the evening of December 14, 1891, J. W. E——, aged five years, accidentally swallowed an open safety-pin. The pin entered the larynx, and for a time caused the most alarming symptoms of asphyxia. Death seemed imminent for one or two hours. A physician was hastily summoned, and gave an emetic, which acted without bringing away the pin. Loss of voice, with great hoarseness, followed. The boy slept well that night, and the next day was not in much pain. He could drink milk and eat soft hominy.

On the 16th, at 9 A.M., he reported at my office with his father, who gave the above history. At this time there was loss of voice, stridulous breathing, and though the expression of the face was anxious, the boy seemed comfortable.

Cocaine was applied, but the lad was so unmanageable no satisfactory examination could be made with the laryngoscope. Having just breakfasted, chloroform, with a view to further examination, at the time was deemed unadvisable, and he was told to report at 2 P.M.

On returning he was chloroformed in his father's lap, a mouth-gag applied, and with the finger I detected a foreign body in the larynx, thought to be a safety-pin. With one of Mackenzie's forceps the twirled end of the pin was seized, but there was such resistance in trying to withdraw it and such suffocation, that I was obliged to let go.

A respite was given and the foreign body was seized a second time, and turned in a different direction, but it was firmly fixed and the extraction was again a failure. The symptoms of suffocation at this period were such that preparations were made to perform laryngotomy or tracheotomy.

However, on the third trial, after seizing the foreign body, the direction of the traction was changed, and I succeeded in removing a medium-sized safety-pin one inch in length.

The next day the patient returned home and gradually regained his voice, without any complication, in about a month.

It is impossible to state positively the exact position which this open safety-pin occupied in the larynx, but judging from the force used in the first two trials to remove it by the mouth, and from the direction of the traction used in the third and successful effort, and from experiments made by placing the open pin in the larynx of a subject in the position I thought it must have been fixed, my conclusion was this: As the boy swallowed the open safety-pin, the projecting point passed under the left vocal cord and hooked under it. My failure to remove it on the first and second trials was due to the peculiar nature of the foreign body, and also to the position it occupied in the larynx, so that it could only be withdrawn in one direction. This line of traction I fortunately hit on the third attempt, thus saving the lad from the operation of laryngotomy.

TREATMENT OF FRACTURE OF THE CLAVICLE.

By A. S. KINNAMAN, M.D.,

CLEVELAND, O.

With the exception of the femur, there is no fracture with which the surgeon has to do where shortening so uniformly results as in that of the clavicle. The testimony of surgeons, from Hippocrates to the present time, is that, however careful the treatment of this fracture, deformity almost always results. The difficulty does not lie in the reduction of the fracture, for as a rule this is very easily accomplished; the trouble is to retain the reduction sufficiently long for nature to establish an osseous union. Even after the parts are properly adjusted the slightest movement of the head or arm, or even that occasioned by respiration, is frequently sufficient to displace the fragments.

I should like to call the attention of the profession to a method of treatment that has proved successful, viz., the use of the bone dowel or peg.

After reducing the fracture in the usual manner, pierce the clavicle with an awl, let it extend from one broken fragment to the other, then insert the antiseptic bone peg completely. The elbow is now suspended in a sling and the arm is confined to the chest either by a few turns of a bandage or a few broad strips of adhesive plaster.

By this method you will not encounter the difficulties met with in the wire suture advocated by Von Langenbeck, and the results will be more perfect.

A CASE OF AMPUTATION OF THE THIGH FOR TUBERCULOSIS OF THE TIBIA—RECOVERY.

By JAMES KENNEDY, M.D.,

SAN ANTONIO, TEX.

Inasmuch as operations for tuberculous disease of bone and joint structures are common, and recoveries from the same are by no means infrequent, and as I have nothing new to advance either as regards diagnosis or treatment, and no improvements to offer on the technique of surgical interference, it may seem a wanton waste of time and space to record this case. Nevertheless, I have the temerity to hope that my report may not be entirely devoid of interest or usefulness.

I was called during the third week of the patient's confinement to bed, and learned that he had been under the care of another physician for more than two weeks, and that, pursuant to his instructions, the limb had been repeatedly painted with the tinctures of iodine and iron, but without relief or benefit.

The only facts relative to the history of the case that I could elicit at that time are as follows: The boy, aged eleven, was said to have enjoyed good health from birth up to the time of his taking to bed on account of a fall which he received while playing football. He fell upon his right elbow and knee. The epidermis was denuded

from the elbow, but the knee showed no external marks of violence. He complained of a general soreness which was in all probability due to the violence, and felt feverish and ill. Pain in the knee-joint became severe, and the limb from the pedal extremity to a short distance above the joint became very much swollen. Fever was more or less continuous, according to the mother's statement, and the bowels were constipated.

At the time I first saw the patient I noted the following symptoms: He was very much emaciated. Temperature, 101° F.; pulse, 130; tongue furred, and bowels constipated. The leg and foot were very much swollen, the swelling extending to the knee-joint and very painful, particularly on pressure. The limb had a boggy feel, and the skin was tense and shiny. Fluctuation was detected with great facility, and pus was pronounced present. The patient was anæsthetized, and three large incisions were made at different points, which immediately gave exit to about three pints of pus. The abscess cavities were flushed with bichloride of mercury solution 1 to 2,000, and drainage maintained with daily flushings of the wounds. The swelling below the joint subsided, and apparent improvement followed. In a short time the pain increased and swelling occurred at and above the joint. Free incision with evacuation of a further quantity of pus, drainage, and flushing were again practised. And again improvement followed. But in the meantime the wound made over the external aspect of the tibia kept discharging pus freely, as much as three or four ounces daily, and another abscess above the knee poured out through an incision almost an equal quantity.

The amount of pus discharged seemed to be steadily increasing, and no improvement in the patient's nutrition was perceptible. Therefore I deemed it expedient to cut down upon the diseased part and remove as much of the bone as might be found to be dead, and, if necessary, make an exsection of the knee-joint.

I had no idea that the bone was so extensively diseased as I found it to be, nor did I anticipate that so radical an operation as amputation of the limb would be required.[1] Having made an incision over the anterior border of the tibia, the bone was exposed and found to be necrosed over its entire circumference. Extending my incision to the lower border of the patella, I found that the head of the tibia had been almost entirely destroyed. The bone was extensively involved in the tuberculous process, and throughout its upper half its ravages were very marked. I opened the joint and found the articular surface of the femur apparently sound, and but for the soft parts being badly diseased, I would have amputated at the knee-joint. As it was, we were compelled to go three inches above the joint in order to find material for sound flaps.

The operation was practically bloodless (thanks to Esmarch and fortunately for the patient), and was performed with the usual antiseptic precautions. The dressings were not disturbed until the sixth day. There was very little pus at any time, and the temperature fluctuated between normal and 101° F., but rarely rising above 99° F.

The patient's condition began to improve almost from the very moment of the operation, and passed on to a recovery which was both rapid and satisfactory. On the fourteenth day he was able to walk about the room on crutches without discomfort. Since his recovery he has added some important features to the history of the case. He tells me that the limb had given him trouble at intervals for a year previous to the operation. "Often while running he would be suddenly seized with pain in the knee, and sometimes it would be so severe as to cause him to fall to the ground. The pain would soon pass off and leave him comfortable for a long time. After running about all day he would sometimes suffer at night from pain in the knee-joint, and at one time he was laid up for two weeks with it. He never noticed any swelling in the joint, although it might have been present."

There seems to be no doubt that disease was present in the bone for some time (a year probably) previous to his late accident, probably in a subacute or chronic form, occasioning the patient but very little trouble until an acute process was lighted up by the injury.

Judging from the appearance of the bone, I am inclined to believe that the disease existed first in the diaphysis of the tibia, and extended centrally and upward through the epiphysis into the joint, destroying the interarticular cartilage, but not affecting the semilunar cartilages or the upper circumference of the epiphysis, with the exception of its anterior and posterior aspects.

The upper epiphysis and the diaphysis (what remains of them) were completely separated by the ravages of this disease, the bone being eaten away through its entire thickness, and were held in approximation by the fibula, whose articulations with the tibia I left undisturbed and for this purpose.

[1] Although dead bone was discovered at the time incision was first resorted to, it was decided to defer an operation for its removal until such time as the patient's general condition had improved, he being very much emaciated and enfeebled by his suffering and disease.

A CASE OF CHOREA IN A NEGRO.

By PHILIP S. ROY, M.D.,

WASHINGTON, D. C.

In an article on chorea by Allan McLane Hamilton, written in 1886 for "The Reference Handbook of the Medical Sciences," I find he states that Dr. Mitchell has found, after careful inquiries, that chorea is unknown in the negro race. Probably no neurologist in this country has had the opportunity, personally, to carefully study nervous diseases in the negro, and this explains why so many incorrect statements are made.

Not ten years ago W. A. Hammond wrote, in his work on nervous diseases, that hysteria did not occur in the negro. I believe I was among the first to refute this statement in an article published in your journal, about four years ago. Certainly, from a scientific point of view, it is interesting to study diseases in the lower races, just as we compare our anatomy, physiology, and diseases with those of the lower animals.

The case of chorea I now have under observation is in a full-blooded negro child, seven years of age. Since writing the above, Dr. Irving C. Rosse, the neurologist, has kindly seen the case with me and confirmed my diagnosis. It is a very marked case.

The Manufacture of Freaks.—Victor Hugo says ("L'Homme qui Rit"), anent a sect that practised very sinister prosthetic surgery: "The 'comprachicos' were a bizarrely hideous, nomad association famous in the seventeenth century, forgotten in the eighteenth, and unknown to-day. They were honest men. They opened a door, entered, bargained for a child, paid and carried it away. The comprachicos were Christians and even good Christians, as befits an association which had its origin in pious Spain." Commenting on this statement the *Medical Standard* some years ago (vol. viii. p. 123) said: "The artificial manufacture of 'freaks' by these procedures, however, lasted much longer than Victor Hugo indicates in his quasi-historical remarks. In the early part of the present century, a Dr. Harper was detected in England in the manufacture of 'freaks' for the English and continental market (*Chicago Medical Review*, vol. iii). He twisted a child's head in an apparatus devised by himself, so that it would look permanently over one shoulder. He grafted a rat's tail on a child's nose. He manufactured 'double monsters' by removing from the backs of two children slips of flesh and allowing the wounds to cicatrize together. After the children recovered, they were taught music, dancing, French, and Italian. He was particularly strict about their observance of the Sabbath. He had a regular catalogue of prices to showmen, who were allowed a discount when the subject was furnished."

Progress of Medical Science.

Resection of the Sternum.—Dr. Yvert reports the case of a soldier, aged twenty-one, who, in addition to general bronchitis, had cold abscesses in the wrist and foot, and one over the manubrium of the sternum. On opening the latter collection the upper part of the sternum was found bare, carious, and covered with fungosities; the body of the bone was displaced so as to lie in front of the manubrium, and the third chondrosternal articulation was disorganized, while behind the sternum there was a vast purulent collection. Four centimetres of the body of the sternum were resected, free drainage provided for, and the parts immobilized with diachylon plaster. The patient left the hospital in eighteen days with only a small fistula, which closed spontaneously after three months. Two months later the man was fit for service. —*British Med. Journal, Sup.*, May 14, 1892.

Pregnancy with Ovarian Tumor.—Dr. Gardner (*The Montreal Medical Journal*, February, 1892), in report of four cases of pregnancy complicated by ovarian tumor, in which three successful ovariotomies were performed, advances the following conclusions: 1. The association of pregnancy and ovarian tumor, if left to nature, is fraught with danger to the woman, whether the termination be premature or at full term. 2. When left to nature, abortion or premature labor may occur, in either case with frequently fatal result to the mother. 3. When the case proceeds to labor at full term, the result to the mother may be rupture or such other injury to the tumor that fatal peritonitis carries her off. 4. Tapping of the tumor, while it may temporarily relieve tension, is by no means free from danger by injury to the uterus or otherwise, and it does not cure the patient. 5. Ovariotomy with modern precautions is nearly as safe in the non gravid condition of the uterus, while the woman is at once cured of a disease which must ultimately demand operation. 6. Serious complications, such as torsion of the pedicle and consequent peritonitis with adhesions, necessitating the use of the drainage-tube for so long a period as five days, does not necessarily lead to abortion. 7. Ovariotomy in the present status of surgery, in the great majority of cases, must be the only proper treatment, and is often urgently demanded to relieve tension. 8. The indication for the operation in the case of small abdominal tumors is even more urgent, because of their great liability to torsion of the pedicle; and in the case of pelvic tumors, by reason of the almost certain rupture or necrosis from compression during labor.

Ingals on Diphtheria.—At the annual meeting of the Illinois State Medical Society, held at Vandalia, May 1892, Dr. E. Fletcher Ingals read a paper on "Diphtheria," of which the following is an abstract: It is a constitutional disease with local manifestations, being similar to vaccinia, the false membrane formed in the fauces being analogous to the peculiar vesicle developed after inoculation with vaccine virus. The disease is contagious, and probably due to a specific micro-organism. Its identity has not, however, been fully established. The Klebs-Löffler bacillus is most generally accepted. Numerous clinical observations and experiments, however, have demonstrated that pseudo-membranous inflammation is often produced without this bacillus, as, for example, that resulting from injuries to the throat or various chemical caustics; certain exudative inflammations, as those attending measles and scarlet fever are not attended by the Klebs-Löffler bacillus. These latter inflammations have been termed pseudo-diphtheria, and it is stated that they can only be distinguished from true diphtheria by the absence of the Klebs-Löffler bacillus, by their being followed by paralysis, and by not being attended by a peculiar form of albuminuria which occurs in true diphtheria independently of dropsy or uræmic poisoning. The necessity for assuming that there are two varieties of diphtheria seems to justify the conclusion that the identity of the micro-organism which is supposed to cause the disease is as yet uncertain. Primary inflammation of the fauces apparently greatly favors the development of diphtheria, and its development and progress seem to be largely influenced by bad hygienic surroundings, such as impure drinking-water, sewer-gas, and the emanations from decaying vegetables and unclean cellars; but it is doubtful whether any of these conditions can of themselves produce the disease. The most frequently predisposing cause of diphtheria is exposure to cold. A careful and detailed description of the symptoms was given, after which the prognosis was discussed at length. It is always grave, and the patient can never be considered out of danger until he has been well three or four weeks, because of the serious sequelæ which sometimes follow. Death may come on within a few hours, but not usually before the fourth or fifth day. The mortality varies according to the severity of the epidemics. The deposit of false membrane in the nose, or nasopharynx, or intestines; the occurrence of extreme pain in the ears or throat, of purpuric spots upon the skin, or of epistaxis or other hemorrhages, and the presence of persistent anorexia, vomiting, diarrhœa, or suppression of urine, are all indications of grave import. Patients may die slowly from asthenia or more quickly by suffocation, or they may suddenly be carried off by heart-failure or convulsions. Not infrequently paralytic symptoms follow the attack about the third week, but except in cases where the respiration or circulatory centres are involved, recovery usually occurs, though it may be delayed for weeks, or even months, and sometimes the paralysis is only partially recovered from, more or less loss of muscular mobility remaining.

For treatment an endless variety of drugs is used. Of first importance is isolation, removal of unnecessary furniture from the sick-room, which must be well ventilated and the door hung with sheets moistened with antiseptics. Ice may be given freely by the mouth, and ice-bags or the ice-water coil should be applied to the throat. If this causes pain, hot applications may be used, and the latter are preferable after the membrane begins to separate. Liquid nourishment should be given frequently and in large quantities. Alcoholic stimulants should not be used early, but kept until depression supervenes. Steam impregnated with lime-water can be used, but is of doubtful utility. Lactic acid, medicinal solvents, tannic acid, and similar astringents are popular, but of little use. Antiseptic solutions, such as of bichloride of mercury, carbolic acid, potassium permanganate, chlorinated soda, chloral, sulphurous acid, and peroxide of hydrogen are useful; also tincture of myrrh, alcohol, tincture of chloride of iron, tincture of iodine, and strong solution of nitrate of silver. The author uses tincture of chloride of iron in large doses, about one minim for each year of the child's age, combined with glycerine and sirup of tolu. This is given every hour or two. Between doses he uses as a gargle or spray a saturated solution of boric acid in cinnamon water, which is harmless and apparently very beneficial. He gives quinine, and when depression comes on alcohol in some form, and nux vomica frequently and in large doses till constitutional effects are observed. He also in some cases uses large doses of calomel till catharsis is obtained, but does not favor the stronger preparation. When the disease extends to the larynx, mild emetics can be given, and also calomel to catharsis. The speaker advised the use of O'Dwyer's tubes early, and then if necessary trachectomy can be performed later.

Doctors of Philosophy, not Medicine.—The quotation, "Who shall decide when doctors disagree, and soundest casuists doubt like you and me?" was written by Alexander Pope, "Moral Essays," Epistle 3, line 1. The original did not apply to doctors of medicine, but to doctors of philosophy.—*Journal of American Medical Association.*

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THE INSANITARY CONDITION OF CHICAGO.

WE have adverted more than once to the high rate of mortality from typhoid fever in Chicago, and to the apparent indifference of the denizens of that place to the existing evil. Other journals have also called attention to the condition of the city, and various articles have appeared recently on the same subject. Among these one by Professor William T. Sedgwick and Mr. Allen Hazen, on "Typhoid Fever in Chicago" (*Engineering News*) has attracted justly much attention, especially outside of that city.

These gentlemen have studied carefully the history of typhoid fever in Chicago, and have made some investigations as to the cause of the extreme prevalence of the disease there.

It is estimated that over 20,000 cases of typhoid fever occurred in Chicago in the year 1891. The total number of fatal cases was 1,997. These figures mean that over one per cent., or about one person in every 60, was stricken down with a preventable disease last year. Such facts are most extraordinary; for they cannot be paralleled by any other great city in the civilized world. They are an evidence of gross neglect or barbaric ignorance; and they constitute a menace to visitors in the future that cannot be too seriously regarded. Typhoid fever practically only attacks persons between the ages of ten and thirty. Of every hundred persons between these ages in Chicago last year, it is safe to say that two had typhoid fever.

That these statements are not exaggerations is shown by the following table, which gives the population and the number of deaths from typhoid fever in the cities and States named:

	Population (in round numbers).	Deaths from Typhoid Fever.
Baltimore, 1891	455,000	140
Boston, 1891	459,000	154
Cincinnati, 1891	300,000	186
New York City, 1888	1,536,000	364
" " " 1889	1,583,000	397
" " " 1890	1,631,000	352
" " " 1891	1,700,000	384
Philadelphia, 1891	1,092,000	684
State of Massachusetts, 1890	2,239,000	835
London, England, 1890	4,421,000	619
State of New York, 1890	6,000,000	1,612
Chicago, 1891	1,200,000	1,997
Baltimore, Boston, and Cincinnati, 1891	1,214,000	480

Chicago, with almost exactly the same population, had in 1891 more than four times as many deaths from typhoid fever as Baltimore, Boston, and Cincinnati combined.

Since 1880 Chicago's typhoid fever-rate has been higher than that of any other of our large cities, although at times Philadelphia has been a close rival.

The cause of Chicago's unenviable eminence as a great typhoid-fever centre is believed to be the deficiencies in its systems of sewerage and water-supply. The pumping-works which ought to lift and direct the flow of the city's waste toward the Mississippi and the little town of St. Louis thereon, are insufficient, and the sewage pours into the lake and pollutes the water-supply. We believe that attempts are being actively made to remedy this. Meanwhile it is currently stated that the medical men of the town are desired to be a little careful about how they report typhoid fever. Whether this be so or not, the number of deaths reported for May was 70, which is at the rate of 800 a year—an average which still gives Chicago a supremacy that the city seems to enjoy, judging from the following item clipped from *The Medical Recorder*:

"The Practitioners' Club held their ninth banquet, and the last one for the season, at the Leland Hotel, May 30th, under the graceful presidency of Dr. Fernand Henrotin. The subject for consideration after the dinner was 'The Sanitary Drainage of Chicago.' Members of the Drainage Board were present, and in a clear and instructive manner explained the present situation, what had to be accomplished, the difficulties in the way, and the steps already taken to surmount them. . . . It was one of the pleasantest and most interesting of these enjoyable meetings."

And seven hundred new cases of typhoid fever the same month!

FEMALE PHYSICIANS AND THE ASYLUMS.

IN Virginia the proposed legislation requiring that there shall be one female assistant at each of the hospitals for the insane has failed. Its friends hope for better luck next time. Meanwhile the Pennsylvania Medical Society has taken a vote and adopted the following:

"*Whereas*, The Medical Societies of the counties of Berks, Bucks, Bedford, Lehigh, Lycoming, Mifflin, Northampton, Montgomery, Schuylkill, Somerset, Perry, and Westmoreland, and perhaps others not yet heard from, have passed resolutions in favor of conferring the entire control and management of our hospitals for the care of the insane on the Boards of Trustees of these institutions, now under the care of superintendents, and of making it incumbent on them to appoint women physicians to have the medical care of the insane of their sex; and,

"*Whereas*, This Society at its meeting in Pittsburg, in 1890, passed a resolution in favor of the reforms advocated by the County Societies above named; and,

"*Whereas*, The marked success of management by trustees in the Eastern Hospital at Norristown, and the value of female physicians for the female insane have been exemplified grandly in that place, with its 2,000 patients; therefore,

"*Resolved*, That a committee be appointed by the President of this Society to memorialize the Legislature for the enactment of laws to carry these reforms into effect."

As a matter of fact, the latter part of the above resolutions is pure rhetoric. The attachment of a female physician to the Norristown Asylum has brought to that institution neither "grand success" nor the opposite. It has made very little, if any, effect upon the economics of asylum administration or the therapeutics of asylum treatment. The truth is, that those physicians best acquainted with the management of asylums do not, as a rule, favor the legal establishment of medical women on the staff. Perhaps they are prejudiced; but it is fair to assume that they know their business better than the professional world-betterers who are bolstering up the movement for compulsory female medical attendance on the insane.

We believe it should be made an optional matter with the superintendent. Sometimes a female physician is needed and is useful, sometimes she may be useful but not needed, and there are specimens of the lady medical who neither adorn nor help this ill-illumined world. It is wrong in principle and unwise in practice to legislate physicians into office because of their sex. The world is governed too much when such laws are enacted.

THE KEELEY CURE IN LONDON.

Our medical colleagues of England have taken the Keeley cure more seriously than have American physicians. They have gone to the trouble of holding meetings, making analyses, and passing denunciatory resolutions. Perhaps this is the best way to attack a humbug, after all, though it makes life a little more restless for honest people. The Society for the Study of Inebriety has particularly looked after Dr. Keeley on his recent trip abroad. They managed to snatch from him the protection of the Church, and they have held a meeting calculated to throw much interesting light on the methods of gold-curing.

A competent analyst, who subjected the curative fluid to examination, reported that he found neither gold nor chlorides. What he did find present was: Water, 61.31 per cent.; sugar, six per cent.; a small quantity of mineral salts, principally lime, probably from herbs; and 27.55 per cent. of pure alcohol.

An Australian physician, Dr. Usher, gave a description of his visit to the sanitarium at Dwight. "The medical staff," he said, "consisted of unsuccessful practitioners, who were paid from $3,000 to $7,000 a year, and they did all the work." One of the staff took Dr. Usher to where three rows of men were being injected in the left arm with five drops out of a little porcelain bowl containing a pinkish material—atropine really. Four of the patients wore glasses, and they told him that they could not see three or four days after the treatment, and became blind weeks together. Seventy per cent. of the patients had glasses. They suffered, too, from giddiness. One patient had been at the institution nine weeks, he said, and was afraid to leave because three of his "pals," who had left ten days before, got drunk, and had to come back. Another patient remained because, he said, if he stayed there two or three months an aunt had promised him an annuity, and he "wanted to see the time out." There was a "Bichloride of Gold Club" in which there were "graduates" and "undergraduates," so called. They did not appear to be healthy; some of them seemed to be under the influence of some drug—apparently atropine. "About £40,000 a year was spent in advertising or in subsidizing people to advertise the concern, which was now engineered by some of the "smartest" men in America. The thing was most lucrative. Two bottles of the preparation cost 36 shillings. Every man who went to Dwight had to pay $25 down and from $5 to $25 a week; and all this money flowed into the coffers of the company.

After such descriptions as this it is not to be wondered at that the Society for the Study of Inebriety passed the following resolutions:

"That this meeting of the Society for the Study of Inebriety (of which the members are registered British medical practitioners) is of opinion that any so-called 'cures' for inebriety, the composition of which is not disclosed, are unfit to be commended by honorable members of the medical profession, who are bound to place the full details of their treatment before their professional colleagues—a requirement as essential in the interest of the public as it is consonant with the disinterested practice of scientific therapeutics.

"That this meeting, having been informed by a competent London analyst, who has made a special analysis, that the alleged 'bichloride of gold cure' shows no trace of gold or of chlorides, and contains 27.55 per cent. of alcohol, condemns unreservedly the prescription of such an intoxicating preparation to an inebriate."

DOES THE BLOOD ROTATE?

The earth is said to be shrinking, but the imagination of certain scientific medical men cannot be withered by age or contracted by the change of years. A San Francisco physician who has evidently a fine play of fancy, and a considerable aptitude for mechanics, has put forth the theory that the blood, as it circulates in the arteries, has a rotary motion and a centrifugal force. He thinks he has succeeded in proving that, "just as the earth rotates on its axis while moving through space, so the blood rotates on its axis while moving through the arteries; that this rotary movement of the blood, with its consequent centrifugal power, is absolutely necessary and indispensable to health and life; that with the existing circulatory system none but a rotary moving current is possible."

Now, perhaps the doctor is right in all this, and perhaps he is not. An excellent authority has demonstrated that the penis is rifled and that the urinary stream rotates, or would do so, if the bladder were strong and the urethra long enough. If the urine rotates, why not the blood?

We only object to the San Francisco thesis on the ground that the author has done everything but proved it. Now, the proof could not be very difficult, as the poet of the rotary theory admits, and it would only have been fair to himself and science to have waited a few days and tested his centrifugal force before enunciating its existence. Arteries have been tapped and the circulation studied from the time of Galen; and if there is really a rotation which has never been observed until the year 1892, in San Francisco, the world would be pleased to know it.

News of the Week.

Dr. William A. Smith, one of the oldest physicians in Newark, died recently after a long illness. He was born at Guilford, Chenango County, N. Y., on March 30, 1820, and was graduated in 1847 from Geneva College.

Sterilized Milk for the Poor of Boston.—The sum of $500 a month during the hot season has been given by two persons, to distribute sterilized milk from the Walker-Gordon Laboratory among the poor of the city in cases of gastro-intestinal diseases of infants. The distribution is to be made through the physicians of the Boston Dispensary and the agents of the Society for the Prevention of Cruelty to Children. More contributions for this object are needed.

Marble Swallowing.—A promising lad was brought to the Cardiff Infirmary not long ago to be relieved of fifty-three marbles which he had swallowed "for keeps." Mr. J. Thomas, who relates the case in *The Lancet*, is responsible for the statement that when the boy was inverted and shaken, "the rattling as of a receding wave on a pebbly beach could be heard for yards around." The marbles were all passed in single file per anum, at intervals, during the succeeding forty-eight hours. Most of them were "commeys," but there were two valuable "blood alleys" and one priceless "buck."

Dr. Enrico Tanfani, a promising young physician of Florence, recently died in consequence of a fencing wound. His antagonist did not notice that his foil had lost its button, and making a lunge with it, drove it into Dr. Tanfani's breast.

Suicides in Berlin.—The suicidal impulse seems to be endemic in Berlin, and lately there has been a remarkable increase in the number of self-killers, no less than twenty-two having been reported for the week ending August 13th. In many cases the reason for the suicide was most trivial, although in the greater number the usual lovers' quarrel was the cause. One man was driven to self-destruction through remorse for having broken his antagonist's clavicle in a fight.

Yellow Fever at Tampa.—It was reported in the daily press a few days ago that yellow fever had appeared at Tampa, Fla., but this is now contradicted. A vessel arrived with yellow fever aboard, but she was anchored some distance away and no communication with the shore was permitted.

Glanders Among Car-horses.—A number of cases of glanders were recently discovered in one of the city car-stables, by the veterinary surgeon of the Board of Health. All the diseased animals were killed, and the Society for the Prevention of Cruelty to Animals has begun a prosecution against the stable foreman who sent the sick animals out, and against a driver who drove one of them.

Small-pox is reported from many ports of the country, but nowhere in a really epidemic form, excepting possibly at a small town in Georgia, where about one hundred cases occurred. The health officers, however, soon succeeded in wiping out the disease. In this city a number of cases have been reported from time to time in different neighborhoods, showing that there must have been several centres for its spread. Several cases which had been concealed for some time have also been discovered. The Board of Health inspectors are now making a house-to-house visitation of the entire tenement-house region, in order to ferret out any other cases which the friends may be trying to conceal. There have been about two hundred and fifty cases here since the beginning of the year.

A Cholera Scare in New Jersey.—The city of New Brunswick, N. J., was, alarmed about a week ago by a report that cholera had appeared at Helmitta, some fifteen miles distant. This is a small manufacturing village, and many Russians and Poles are employed in the factories. The report proved to be untrue, however, as the disease was found to be a severe form of dysentery, and not cholera.

A Testimonial to Sir George Buchanan, F.R.S.—It has been proposed to open a subscription list in England with a view of presenting to Sir George Buchanan, who has lately resigned the post of Medical Officer of the Local Government Board, some testimonial in recognition of his services in the cause of preventive medicine. It has been suggested that sanitarians in this country might also wish to subscribe to this testimonial. Any so desiring may send their contributions to Dr. John S. Billings, Army Medical Museum and Library, Washington, D. C., who has been authorized to collect funds for the purpose in the United States.

Vaccination against Cholera.—Dr. Hafkin claims to have elaborated a vaccine capable of conferring immunity against the disease in animals. He has also vaccinated a number of his medical colleagues, and reports the results in the *Bulletin Médical* of July 31, 1892. In each case he noted fever, malaise, and loss of appetite for a few days succeeding the injection. He did not carry his experiments so far as to feed his friends upon comma bacilli, in order to prove protective the efficacy of his vaccine. He says, however, that this has been abundantly demonstrated in the case of animals, and his experiments upon man have shown that there is not the slightest danger to be apprehended from the inoculations. But Ferrán will doubtless dispute Hafkin's title to priority in cholera vaccinations.

Dr. J. Albert Kimball, a dentist of this city, killed himself in his office on the morning of August 16th, while suffering from melancholia.

Sulphuric Acid Instead of Wine.—The pastor of a Presbyterian church in Dutchess County, N. Y., in giving the communion to his congregation last Sunday morning, accidentally substituted a bottle of dilute sulphuric acid for the wine. About twenty persons sipped the acid, without any serious ill effects, although they were greatly alarmed when the mistake was discovered.

The New St. Luke's Hospital.—The competitive plans for the new building of St. Luke's Hospital were recently placed on exhibition in this city. Ten architects have offered plans in response to an invitation sent them some time since. The hospital authorities do not seem to favor the pavilion system, as nearly all the designs submitted are for a four-story building with basement and attic.

Smuggling Antipyrin.—The captain of the British steamship Rhein, from Bremen, was arrested in New Orleans a few days ago for smuggling antipyrin. The Treasury authorities in Washington have been aware for some time that a large smuggling business was being done in this particular drug, for the reason that large quantities of it have been sold at a price below that charged by the single house which imports it into this country. The Government detectives have been on the watch for the smuggler for some time, and finally arrested the captain of the Rhein, who confessed that he had been bringing in the drug surreptitiously, and had made a fair profit in so doing.

"**The Medical Recorder**," of London, has recently come to an end. It was a well-conducted paper, and most of its selections were made with judgment, but unfortunately people didn't want it enough to pay the subscription price.

Medical Politicians.—Members of the profession in England seem to take a more active interest in politics than those in our country. A large number of medical men were candidates during the recent parliamentary elections, not a few of them succeeding in winning the prize. A surgeon in Southampton took such a decided interest in the contest that he killed a man whose political views did not coincide with his own.

Mr. Conan Doyle, the novelist, is a doctor of medicine, and was for a number of years ship's surgeon on British vessels. He has dropped his title since retiring from practice. It is a pity that he changed his profession, for good ship's surgeons are more needed, as well as more rare, than good novelists.

The New Russian Pharmacopœia has recently been issued. Compared with the preceding work, it contains a smaller number of articles, three hundred and eighteen having been discarded, while only one hundred new ones have been added. The total number now officially recognized is eight hundred and eight.

Dr. Thomas M. Healey died on August 10th, at his home in Cumberland, Md., at the age of fifty-three. Himself the son of a physician, he early developed an aptitude for that calling, and during the thirty years of his medical life he gave ample proof that he had not mistaken his vocation. He was a skilful diagnostician, a more than usually successful therapeutist, and a ready writer on medical subjects.

The Cholera has made little or no advance toward Western Europe during the past week, and is reported to be on the decrease in St. Petersburg. It appears that the disease in Russia has been of a more severe type than the authorities were at first willing to admit, the official report recently published showing that the mortality-rate in the more seriously infected districts was about fifty per cent. of those attacked. The daily average of cases during July was, for all Russia, 8,601, and the number of deaths per day was 4,268. Our Government is said to be considering the expediency of prohibiting altogether the importation of rags and paper stock from Europe and the East as long as the cholera is epidemic.

Medical Society of Virginia.—The Twenty-third Annual Meeting of this Society will be held at Alleghany Springs, September 13th, 14th, 15th, and 16th. The object for general discussion will be "Vertigo." The discussion will be opened by Dr. E. T. Brady, of Marion, and continued by Dr. L. C. Gray, of New York. The following papers are announced: "Appendicitis," by Dr. William Edward McGuire, of Richmond, Va.; "Laparotomy and the Good Accomplished by It in Gynecology," by Dr. R. S. Martin, of Stuart, Va.; "Some New Ideas that are Old," by Dr. S. W. Dickinson, of Marion, Va.; "Necessity of Prompt Action in Cases of Placenta Prævia, with Report of Cases," by Dr. L. H. Keller, of Luray, Va.; "Some Ocular Diseases in Children," by Dr. Philip Taylor, of Richmond, Va.; "Mysteries of Medicine," by Dr. C. W. Gleaves, of Wytheville, Va.; "Injuries of the Knee: Their Treatment and Results, with Special Reference to the Prevention and Cure of Suppurative Action in and about the Joint," by Dr. M. W. O'Brien, of Alexandria, Va.; "The Causative Relations of Bacteria to Disease," by Dr. C. M. Blackford, of Lynchburg, Va.; "Common-Sense in the Treatment of Discharge from the Ear," by Dr. Alexander Duane, of New York, N. Y.; "Some Uses of the Iodides," by Dr. L. G. Pedigo, of Roanoke, Va.; "Cataract," by Dr. Joseph A. White, of Richmond, Va.; "Some Remarks on the Continued Administration of Digitalis, Illustrated by the Report of a Case," by Dr. F. M. Brooks, of Fairfax Station, Va.; "Uterine Hemorrhage and Present Method of Treatment," by Dr. A. Vander Veer, of Albany, N. Y.; "Surgical Management of Fibroid Tumors of the Uterus," by Dr. Joseph Price, of Philadelphia, Pa.; "Modern Electrical Methods as a Substitute for Surgery in Certain Pelvic Affections," by Dr. G. Betton Massey, of Philadelphia, Pa.; "Sexual Hypochondriasis and Perversions of the Genesic Instinct," by Dr. Irving C. Rosse, of Washington, D. C.; "What shall be Done with the Imbecile?" by Dr. Samuel J. Fort, of Ellicott City, Md.; "Hypnotism as a Therapeutic Agent," by Dr. William Lee Howard, of Baltimore, Md.

"**The Bird that Laid the Vaccination Egg**" is a virulent attack on the personal and professional character of Jenner, the discoverer of vaccination as a protection against small-pox. The gravamen of the argument is that Jenner's success, in disseminating his views were due to his being a Fellow of the Royal Society, a distinction conferred upon him—so it is alleged—as a reward for his observations on the habits of the cuckoo. These observations, it is asserted, have since been completely disproved, and as Jenner was wrong on that point, therefore he was wrong all round. The assertion is, however, false, as others have recently observed the very same habit of the young cuckoo which Jenner described.

The American Medical Association and Politics.—The editor of the *Medical Mirror* says that he wants no more of the medical politics of the American Medical Association. For years he had been a member engaged in reading papers and taking part in the discussions of the sections with no thought of office, until three years ago friends fired him into public place without consulting him; he tried to do his duty, and at the expiration of his term retired as gracefully as he could.

Reviews and Notices of Books.

Braithwaite's Retrospect. Vol. CV. January to June, 1892. London: Simpkin, Marshall & Hamilton Co. 1892.

The scope of this work is too widely known to require any extended comment. In this handy volume has been condensed the cream of English medical literature of the first half of the current year. Its index is complete, and it will form a valuable working book for any library.

Hydrotherapy at Saratoga. By J. A. Irwin, M.D., etc. New York: Cassell Publishing Co. 1892.

In successive chapters are discussed the geography and geology of Saratoga, origin of mineral waters, and analysis of the various springs. The latter part of the volume is devoted to the general therapeutics of balneology, with special reference to the local conditions at the great American spa. A judicious tone is followed throughout, and the chapters will prove interesting to anyone, physician or layman, who is intending to visit Saratoga. The work is useful, however, merely as a general guide, and will not take the place of a physician for one who visits Saratoga for health purposes.

Diseases of Women: A Treatise for the Use of Students and Practitioners. By Alexander J. C. Skene, M.D., Professor of Gynecology in the Long Island College Hospital, Brooklyn, N. Y. Second edition, revised and enlarged. New York: D. Appleton & Co. 1892.

In the present edition new chapters have been added on ectopic gestation, diseases and injuries of the ureters, vesical hernia and its surgical treatment, and the latest views of the author have been given in the discussion of laparotomy, ovaritis, and injuries of the cervix uteri and pelvic floor. The typographical appearance of the volume, together with its wealth of illustrations, are beyond criticism.

The high position justly accorded Dr. Skene in gynecology renders it superfluous to write merely formal words of commendation. Probably no book was ever written by a master-mind which did not cause more or less discussion as to the truth and logic of some of its doctrines. In just so far as a writer on medical and surgical topics incorporates his own experience into his pages, is he liable to run counter to the ideas of other men in minor matters. We take pride in regarding the present work as an able exponent of American gynecology. It bears the impress of the careful student and the able clinician.

We cannot here enter into a discussion of controverted points, wherein Dr. Skene differs from other gynecological teachers. We congratulate the author that his work has been made a text-book in so many of our leading medical schools. No one is more than he moulding the views of the present generation of American students.

The Diagnosis of Diseases of the Nervous System: A Manual for Students and Practitioners. By Christian A. Herter, M.D., Physician to the Class of Nervous Diseases, Presbyterian Hospital Dispensary. New York: G. P. Putnam's Sons. 1892.

This is a work that commends itself to the reader as one that is eminently practical and well suited to the needs of the young practitioner, or of the student attending a dispensary class on diseases of the nervous system. There are chapters on the structure and function of the nervous system, symptomatology, diagnosis of the position of the lesion (localization) and of its nature, of clinical types, and an important one on the distinction of functional and organic nervous diseases. Directions are given for the examination of the patient, and finally there are upward of a score of very instructive illustrations of diagnosis in specific cases. The book is, as it was intended by its author to be, elementary in character, and therefore somewhat too simple to meet the wants of the declared specialist in neurology, but for the ordinary practitioner and for the beginner in nervous diseases it will prove itself to be of undoubted value, and it is to the latter that we would specially commend the work.

Homœopathic Bibliography of the United States, from the Year 1825 to the Year 1891, Inclusive. Carefully Compiled and Arranged by Thomas Lindsley Bradford, M.D. Philadelphia: Boericke & Tafel. 1892.

This might have been made a very valuable work, for it seems to be very complete and is evidently the fruit of much patient labor on the part of the compiler, and furthermore the field was unoccupied. But Dr. Bradford has, for some reason, seen fit to arrange it by authors instead of by subjects, consequently the book is worthless as a work of reference. There is an index, but that is no help, for it, too, has to do only with authors. It is a pity that so much time and labor have been thrown away in making a book that is of no practical utility, when the same amount of time and labor judiciously expended might have resulted in a reference work of great historical value.

Proceedings of the Philadelphia County Medical Society. Volume XII. Session of 1891. T. B. Schneideman, M.D., Editor. Philadelphia. 1891.

This handsomely printed volume of transactions bears testimony to the fact that the work of the Philadelphia County Medical Society during 1891 was fully up to that of the preceding years. The work contains upward of sixty papers, and a note of the editor states that several papers read before the Society during the year were not printed in this volume.

Transactions of the Southern Surgical and Gynecological Association. Volume IV. Fourth Session, held at Richmond, Va., November 10, 11 and 12, 1891. Published by the Association. 1892.

The volume before us contains the usual number of papers on subjects relating to diseases of women and to general surgery. It is fully up to the average of previous volumes of the "Transactions," and bears evidence to the fact that the Society is a live one and that its members take sufficient interest in its meetings to prepare papers worth listening to and worth preserving in permanent form.

Les Maladies des Yeux dans leurs Rapports avec la Pathologie Générale. Par le Dr. Emile Berger. Leçons Recueillies par le Dr. R. de Saint-Cyr de Montlaur, Revues par le Professeur. Avec 43 Figures Intercalées dans le Texte. Paris: G. Masson. 1892.

This is an excellent treatise on diseases of the eye in their relation to general diseases. It is, of course, well known that ocular changes often accompany or follow systemic diseases, the retinal changes in Bright's disease being perhaps the most familiar to the general practitioner; but few realize how varied these changes are, and how many and different diseases they accompany. The relations here existing are often treated of at some length in ophthalmological works, but as the eye troubles are grouped under those of the lids, cornea, lachrymal apparatus, etc., the reader obtains no clear idea of the various affections that may accompany any particular pathological entity. In this book, however, the author has grouped the eye diseases according to their dependence upon the general affections, so that the reader may see at once what alterations in the different parts of the visual organs may arise from one and the same systemic disease. The work will be as useful to the general practitioner as to the ophthalmologist.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, April 1, 1892.

DR. GEORGE L. PEABODY, PRESIDENT, IN THE CHAIR.

Case of Huntington's Chorea.—DR. CHARLES L. DANA presented a patient suffering from Huntington's chorea. His ancestors had come from Scotland, and for four generations gave a history of chorea. His great-grandmother died of this disease, which began about the age of thirty-five; his grandmother and mother also had it at about the age of thirty-three. The patient presented was about thirty-six years of age, and had begun to show symptoms of the disease about three years ago. In some instances several members of the same generation had been its victims. Patient was well until this affection begun by causing some disturbance of speech, then came some evidence of emotional weakness, then a peculiarity of the gait, and a choreic motion of the head. The mental deterioration and choreic movements continued to increase until he had to give up work and was admitted to a hospital. The head tended to droop and moved rythmically backward and forward, especially when he was walking. There were also some ordinary choreic movements in the face and upper extremities. He ground the teeth at night. There was no lack of co-ordination.

Cases Illustrating Skin-grafting.—DR. ROBERT ABBE presented three women illustrating the value of Thiersch's method of skin-grafting. The first case was that of a middle-aged woman who was suffering from lupus exedens on the face, where it had existed about fifteen years. During this time it had been treated by different persons by various means. Of late it had extended rapidly both in area and in depth, involved the soft parts in front, above, and below the right ear, also to some extent posterior to the ear and the anterior portion of the ear itself. Dr. Abbe operated, taking out all the affected tissue and cutting well into the healthy surrounding structures, removing a part of the ear, and the cartilage within the auditory canal. Skin-grafts were then made after the method of Thiersch, obtaining them from the thigh and using only a very thin external layer. Union took place throughout, and the parts presented within three weeks a smooth, healthy surface with the usual slightly uneven and reddish appearance.

The second case was one in which, seven years ago, he had removed a fibro-sarcoma from the forearm which extended no deeper than the cellular tissue. A large, open wound was left to heal by granulation. Later he had covered it by the ordinary method of skin transplantation. Five years after this, which was recently, there had been evidence of recurrence. He took away the cicatrix and covered the open surface by Thiersch skin-grafts, all of which took and left a healthy arm inside of three weeks.

The third case occurred in a woman who over two years ago sustained an extensive burn of the forearm and wrist, nearly encircling the member up to the elbow. This large surface was covered with the Thiersch skin-grafts and in a short time presented an unbroken healthy appearance throughout. It was to be observed that although the skin-grafts were so very thin when first applied, they afterward thickened and formed a pliable integument. They would "take" on any tissue, even on bone.

Exploration of the Kidney for Renal Colic.—Dr. Abbe also presented a man who for more than four years had suffered from attacks of renal colic which during their existence kept him from work. There was some blood in the urine. The symptoms pointed to calculus in the right kidney. Three weeks ago he made Koenig's incision, a curved incision in the loin over the kidney, the horns pointing upward and forward toward the rib. It was remarkable with what ease one could reach the kidney through an opening of this form, although, as in this case, there was considerable fat and the distance down to the organ was much greater than usual. The kidney was lifted, an incision made into its greater curvature until the pelvis could be explored, and the ureter probed down to the bladder. While the bleeding was greater on cutting into the cortex of the kidney than when one entered the pelvis of the organ through the fibrous structure, yet the hemorrhage could readily be stopped by pressure, and subsequently, owing to primary union, there would be no leakage of urine. Incision through the fibrous structure at the pelvis always left a fistulous tract. As was often the case, no stone was found in this instance, but calcareous papillæ were scraped away, and the man had been free from pain since.

THE PRESIDENT remarked that this case was in his ward on the medical side of the hospital a week, and he could say that the relief had been very pronounced since the operation by Dr. Abbe, although no stone was found. He also stated that it was a very gratifying surprise to find how thoroughly the kidney could be inspected, although situated so deeply, after it had once been reached by Koenig's form of incision.

Cases Illustrating Difficulties of Diagnosis in Lesions of the Stomach and Liver.—DR. A. ALEXANDER SMITH related the cases. The first was one of ulcer of the duodenum, the interest of which consisted in the fact that although perforation took place and caused death, yet there was no peritonitis, no tympanites, no obliteration of the liver dulness. One afternoon in the month of January, 1881, he was requested to see a woman who gave the following history: She was about fifty-one years of age, and had been suffering four or five weeks from what she called dyspepsia. She had visited a physician at his office twice, which was all the medical treatment she had received. On inquiry he learned that she had had attacks of vomiting, and that for three or four days she had taken nothing but water. No food could be retained. The earlier history was that she had been in good health until 1879, when, during a stay in Europe, she suffered from dyspepsia, said to be due, by a number of physicians who saw her, to malignant disease of the stomach. She had had two attacks of hemorrhage, her weight decreased from one hundred and thirty-eight to eighty-nine pounds, and the physicians said that she would die. Her husband, however, being a Scotchman, said that she should not die, that she should not see any more doctors, fed her on lime water and milk, and she recovered sufficient strength within three months to return home. Since then she had had ups and downs until about four weeks before Dr. Smith saw her, in January, 1891.

He came to the conclusion that whatever may have been her trouble, careful lavage might give her relief. At 9 P.M. he very carefully washed out her stomach with a mild alkaline solution, and suggested that she take nothing but kumyss. Two hours afterward she said that she felt better than she had felt in three months; took more kumyss. At 2 o'clock awoke again, said she was perfectly delighted, and expressed the belief that the benefit was due to the kumyss, of which she took a little more. Altogether she took the kumyss four times. Early next morning she awoke in great agony, complaining of severe pain about four inches to the right of the mesial line and just below the ribs. She sent for aid in the neighborhood, and when Dr. Smith arrived, about an hour later, she was in apparent collapse. The pulse was fast; the temperature subnormal. There was no tympanites, no obliteration of liver dulness, no general pain, no vomiting. Some relief was afforded by morphine. Dr. Smith thought there was perforation, probably of the stomach, although there was no tympanites. The patient seemed to improve up to midday, then had another attack of pain and collapse, and died about 9 P.M., retaining a clear mind until half an hour before death. At 7 P.M. the temperature rose for the first time, reaching 107.5° F.

Autopsy.—Dr. Biggs made the autopsy, which revealed a little fluid in the stomach, some cicatrization at the pyloric orifice, which was contracted, admitting only a small lead-pencil; there had apparently been no relighting of the process which had existed in 1879. In the duodenum, just beyond the pyloric opening of the stomach, was an ulcer. Between this and the lower surface of the stomach there had been thickening of the peritoneum with adhesion. Evidently the adhesions had before been a protection against perforation of the thin duodenal walls at the point of the ulcer, but finally had become in some degree ruptured, led to a small perforation, and death. The small size of the opening had prevented sufficient escape of gas to be appreciated by palpation. In the pelvic region there was slight peritonitis, which apparently had begun about two hours before death.

Gall-stones and Abscess, with Probable Carcinoma of the Liver.—The second case related by Dr. Smith was that of a man, aged sixty-five, who entered Bellevue Hospital in January, 1892, stating, as he had learned later, that he had cancer of the liver and wished to be cared for. He absolutely declined to give any history of himself, to tell who were his friends or where was his home. He was pale, and had lost flesh. He was examined by several of the physicians, who found what apparently was a carcinomatous tumor of the liver. It was irregular, firm, non-elastic to the feel. There was no temperature elevation. The record after ten days was that there had been no vomiting, no jaundice, no fluid in the peritoneal cavity. On the tenth day, however, there suddenly appeared decided increase in size in the epigastric region, with fluctuation. This was cut into, pus of chocolate color (twenty ounces altogether) escaped, and fifteen gall-stones were removed. The following day eleven more gall-stones came away, varying in size from that of a pea to that of a hazel-nut. The case then appeared to be one of mistaken diagnosis; that it was one of abscess of the liver, or possibly of the gall-bladder, instead of cancer. Still the irregular outline and enlargement of the liver which had suggested carcinoma remained. The man went on to emaciate and died, and they fully expected to have an autopsy, but were disappointed, inasmuch as two priests came and identified him as their brother.

Dr. Smith was still inclined to think the case was one of malignant disease, and that the pus formation was connected therewith; that it was not a kind of pus which would form in the gall bladder. On this point he made the following remarks and cited several recorded cases:

The fact that evidences of the cancerous growth in the liver remained after the evacuation of the pus suggests some doubt as to the locality of the abscess. The pus contained liver-cells in abundance and was of the dark chocolate color so often found in liver abscess. No cancer-cells were found in the pus. It was thought possibly a cancerous mass in the liver might have undergone suppuration. Osler, in his work on Practice,[1] says suppuration sometimes follows secondary cancer. No evidence was found of cancer elsewhere, unless possibly there was cancer primarily of the gall-duct. And this would not seem unlikely, as there might have been a primary cancer of gall-duct, with abscess in the gall-bladder. This view, too, would be strengthened by the fact of the escape of thirty-one gall-stones through the abscess opening.

Case of Medullary Carcinoma, partly Suppurating; Jaundice from Closure of the Common Duct by Cancerous Nodule.—Male, aged sixty five, jaundiced a few days; cachectic appearance; good health till some weeks prior to death; epigastric pains, lancinating tenderness; pulse 70; copious sweat; no liver enlargement, but abdomen very tense, which interfered with palpation; constipation; after two weeks, epigastric fulness and tenderness; ten days later, vomiting, constant pain felt nearer navel; small tumor midway between navel and epigastrium; four days later tumor more distinct and had extended toward navel; fixed; a week later tumor perceptibly increased day by day, was irregular and raised above surface of abdomen, which is flat; epigastric fulness; exhaustion intense; death.

Autopsy.—Lower edge of liver three inches below ribs; liver large and "myristicated" over surface, and embedded in it were several round bodies of grayish-yellow color having the consistence of wax; near extremity of left lobe one of these is softened and broken down as if suppurating, and some of the larger appear in state of incipient softening; head of pancreas cancerous—soft like that of liver; aorta and inferior cava and their branches surrounded by cancerous mass; no ascites; masses chiefly on convexity of right lobe; diseased lymphatic glands formed chief bulk of tumor; felt during life; common duct occluded.[2]

Case of Softening of Cancer.—Female, aged fifty-five; weight of liver, six pounds eight ounces; small tumors varying from size of hen's egg to orange; some solid with softened centres, others contained cavities with yellow serum; tumors consisted histologically of nucleated cells in fibrous alveoli; no cancer elsewhere; gall-bladder small, bound to liver, and filled with stones, and walls were thickened with cancerous tissue.[3]

Specimen in Museum of College of Physicians and Surgeons, New York, from St. Luke's Collection: One-half of Tumor of Liver.—Cancerous cyst would hold a baseball; contained large quantity of pus-like material; cyst-wall irregular and shaggy, and surrounded by cancerous tissue externally; solitary. (The other half of tumor sent to Smithsonian Institute.)

Cancer and Gall-stones.—During twenty-one years (1854–74) not a single case recorded, in post mortem reports at Guy's, in which death occurred, with chronic exhaustion and wasting, as the simple result of the jaundice due to impaction of a gall-stone in common duct.[5] The way in which death is most frequently brought about in persons who have gall-stones is by the development of cancer about the bladder or cancer ducts.[6]

During the same twenty-one years above mentioned, twelve cases such as these.[7] Cancer of bile-passages is associated in many cases with gall-stones.[8] Seven-eighths of all are associated with stones.[9]

Berlin records (1870–89) of 258 cases of hepatic cancer show 25 primary of gall-bladder, 2 primary of bile-ducts, 6 of true primary cancer of liver, 2 of these latter doubtful.[10]

Cancer of gall-bladder is commonly primary, extending to peritoneum and liver secondarily. It is remarkable that in most of these cases the bladder contains stones and the cancer appears to be a sequel thereof.[11] Of 11 cases of cancer of bladder reported by Frerichs, gall-stones in 9.[12] Cancer of gall-bladder is a common sequel of stones. At Guy's Hospital, indeed, it has been found that when death occurs in persons with gall-stones, it is most frequently brought about by cancer about the bladder and bile-ducts.[13] Gall-stones may form in radicles of hepatic duct in the interior of liver. These concretions may partially obstruct and cause dilatation of ducts, and sometimes cause multiple abscesses. A case is reported by Dr. Tuckwell where a large abscess in right lobe, formed in this way, perforated diaphragm, causing empyema and gangrene of lung.[14]

Case of Carcinomatous Cyst of Liver.—Male, aged fifty; cyst contained light-colored fluid and shreddy particles of broken-down cancerous tissue; masses of similar carcinomatous tissue in other parts of liver, chiefly in left lobe, near surface; no other cysts; cancer of pylorus, soft, encephaloid.[15]

Case of Acute Cancer Simulating Suppuration.—Male,

[1] Popham: Dublin Quarterly Journal Medical Sciences, 1864, xxxviii., p. 467.
[2] Bellevue and Charity Hospital Reports, 1870, p. 361.
[3] Fagge, vol. i. p. 290. [4] Ibid., p. 290. [5] Ibid., 290.
[6] Osler: Practice, p. 451. [7] Ibid., p. 453.
[8] Hansemann, of Path. Inst of Berlin: Berlin klin. Woch., No. 16; quoted in Lancet, London, 1890, i., p. 922.
[9] Murchison: Clinical Lectures on the Diseases of the Liver, second edition, p. 526. [10] Ibid., p. 449.
[11] Ibid., p. 372. [12] Ibid., p. 389.
[13] J. W. Ogle: Transactions of the Pathological Society, London, 1858, ix., p. 237.

aged twenty-five, long dyspeptic; in March, indigestion, pain, and vomiting, anæmia, constipation; in April, pain and vomiting increased, chiefly at evening time; in May, tetanoid cramps, pain greatest in flank, vomiting marked, constipation obstinate; rigors, profuse sweats, temperature 102° F. to 103° F.; abdomen very swollen and tympanitic; hepatic dulness increased, covering whole right loin; liver dulness two inches below ribs in mammary line; no jaundice, but bile pigment in urine; after two and one-half weeks of rigors and sweats, making it impossible to distinguish from suppuration, died on May 21st.

Autopsy.—No pus; hard-based ulcer at pylorus; glands at head of pancreas and root of mesentery soft; cancerous growth with effused blood; a reticular carcinoma; liver twice normal size; one-half of substance of liver appeared soaked in extravasated blood.[1]

Thickened Gall-bladder Resembling Carcinoma of the Liver.—Dr. Robert Abbe could recall two cases of gall-stone closely resembling carcinoma of the liver. In one the mass in the region of the gall-bladder was as large as one's fist, perfectly solid to the feel. He thought it was a carcinomatous mass, and therefore hesitated to cut into it. An incision, however, showed that inside the thick walls, a depth of an inch and a half, there was a drachm and a half of pus. A fistulous opening was left; a bad prognosis was made. At the end of six months a gall-stone was seen encrusted in the opening. It was crushed and removed, and six months later when he saw the woman the indurated mass had entirely disappeared.

The association of pus with carcinoma of the liver was not, he thought, rare. He could recall just then one case of empyema of the gall-bladder supposed to be due to gall-stone. The pus was evacuated; no stone was felt; later it was found to be a case of carcinoma at the lower end of the gall-duct with numerous secondary nodules throughout the liver.

Dr. Francis Delafield said, bearing on the difficulty of telling whether there was enlarged liver or something else, that he had seen a case last week in a town outside of New York which had been diagnosticated as waxy liver. The man had apparently a very large liver, extending downward, and the attending physician said that the aspirator needle had been introduced more than once for purposes of diagnosis, but nothing had been found. It seemed evident to Dr. Delafield that the patient was suffering from an abscess somewhere, but owing to the general condition and his own feeling of politeness aspiration was not repeated. The patient died, and it was found that he had an enormously enlarged gall-bladder, which, instead of being enlarged in the ordinary way, was enlarged along the lower border of the liver, symmetrically with that organ.

Anomaly of the Liver Mistaken for Pyonephrosis.—The President mentioned a case in which a tumor was felt and the diagnosis made of pyonephrosis of the right kidney. An able surgeon made an incision in the loin, the mass was felt, and attempts were made to lift it out. Considerable difficulty being encountered, a piece of it was cut off and examined; it proved to be liver. It seemed to have been a case of congenital malformation of the liver in which the organ was much elongated, the left lobe being absent.

Cancer of the Stomach without Gastric Symptoms.—Dr. F. P. Kinnicutt had seen within the last two years two cases of cancer of the stomach, the diagnosis being confirmed by autopsy, in which there were absolutely no gastric symptoms if one excluded failing nutrition and anorexia. In both there was absence of hydrochloric acid from the stomach contents, but it was thought this might be due to a catarrhal condition or atrophy of the gastric tubules; they did not suspect carcinoma.

Gastroenterostomy for Stenosis.—In the absence of Dr. W. T. Bull, a patient sent by him was shown by Dr. Kinnicutt. The man had entered Dr. Kinnicutt's ward at St. Luke's, in 1888, with stenosis of the pyloric end of the stomach and great dilatation. His weight had been reduced to one hundred and twenty-one pounds. At present it was one hundred and eighty pounds. Dr. Bull first performed digital dilatation of the stricture, which gave relief for about a year. He then resorted to gastroenterostomy, it being over two years ago that this operation was performed. The man had since had no trouble with digestion, his bowels were regular, he was in every way well. So far as could be determined, the stomach was not now in a state of dilatation. In this case Dr. Bull made the artificial opening into the stomach for the performance of gastroenterostomy at a greater distance from the pylorus than usual, so that less food would collect and remain in the most dependent part. He asked Dr. McBurney if he did not think that a wise course.

Dr. McBurney replied that he thought it was.

The Dose of Nitro-Glycerine.—The President made some remarks upon this subject. It had occurred to him on a number of occasions, when giving nitro-glycerine for very high arterial tension, that a negative result might be changed into a favorable one by increasing the dose beyond that ordinarily recommended, or until the desired effect was produced. It seemed to him important in giving this agent, as in giving others, that the dose, if the patient could be observed carefully, should be carried up to the point of producing the specific effect, unless some contra-indication should arise. The dose of nitro-glycerine, as stated in the books, was $\frac{1}{100}$ of a grain. But he had recently had two cases in which that amount had been largely exceeded. One of the patients was a blacksmith, sixty years of age, who had marked diffuse nephritis, mitral insufficiency, and general thickening of all the superficial arteries. The renal history and the cardiac history extended over four or five years. The urine was always abundant, always contained granular casts and albumin, and the pulse was always of high tension until he was put upon nitro-glycerine. On January 12th he was given the ordinary dose of $\frac{1}{100}$ of a grain of nitro-glycerine every four hours. It was rapidly increased until, in February, he was receiving a grain every two hours, or twelve grains in the twenty-four hours. By February 21st he received two grains every two hours. It was only under two grains every two hours, day and night, that dyspnœa disappeared, the strength increased, and he was able to go out of his ward. He improved so much that he insisted on going to his daughter's, in Buffalo, and in order to enable him to undertake that journey without receiving such large doses of nitro-glycerine when not under observation, the dose was gradually diminished. He left in March, while taking two grains every four hours. There had been absolutely no unpleasant symptoms attending the use of the drug, but very decidedly beneficial effects. He afterward learned that at Rochester the man became so ill that he was taken to a hospital, where he was recognized by one under whose care, as house-physician, he had been in New York. This gentleman spoke of the large doses of nitro-glycerine which he had been receiving in New York, but the hospital physicians were so horrified that they allowed him to renew them only on his own responsibility. The second day sufficient amount of the drug was obtained and improvement followed at once upon its use.

The second case was one of Bright's disease under his care in the New York Hospital, with pulse of very high tension, occasional attacks of profuse and painful vomiting. The patient said that for two years he had suffered from vomiting before rising from bed in the morning; was then able to get up, but could not work. There was hypertrophy of the left ventricle. About November 1st he began giving $\frac{1}{100}$ of a grain of nitro-glycerine, gradually increased the dose, until he was receiving by the end of the month $\frac{1}{8}$ of a grain every hour. On January 1st he received half a grain every three hours, then half a grain every two hours, then a grain every three hours,

[1] Moxon: Medical Times and Gazette, 1873.

day and night, for several weeks. The pulse improved in tension very much, but occasionally it would return to its original tension and then he would have attacks of persistent vomiting, lasting perhaps three days, and controlled only by enormous doses of morphine administered hypodermatically. During the vomiting attacks the nitro-glycerine was administered in the same doses subcutaneously.

It was of interest to note that when he went off duty Dr. Partridge did not continue the nitro-glycerine, but gave chloral hydrate, fifteen grains every three hours, since which time there had been a better pulse and only one attack of vomiting.

It was a curious fact that some people could not take even $\frac{1}{100}$ of a grain of nitro-glycerine without unpleasant effects.

Dr. Kinnicutt had a case of general arterial sclerosis in St. Luke's Hospital, the pulse being of extremely high tension, the symptoms very distressing. The dose of nitro glycerine in this case had to be carried up to three grains and a half every hour during the waking hours before relief was obtained. These large doses had not only improved the pulse, but had given relief in many ways. He had seen the cerebral condition in general arterial sclerosis very markedly improved under frequent and large doses of nitro-glycerine.

A very striking case was that of a lady who, from being constantly in a dull cerebral state, became, before her death, as lively and happy as possible. She died finally from the effect of the sclerosis, but her life was made much more agreeable to herself and those about her during the last months by pretty continuous dilatation of the cerebral vessels, secured by nitro-glycerine in large and repeated doses. He thought so good a drug should not be abandoned because what generally had been regarded as a proper dose failed to produce the desired effect. The amount should be increased until the physiological effect became manifest. In acute conditions the dose should be frequently repeated, for the effect was very evanescent. In acute œdema of the lungs he had, he felt sure, saved life by giving it every fifteen minutes in doses sufficient to produce the physiological effect.

Dr. Andrew H. Smith asked the President whether the physiological effect of the drug ceased to be produced by a given dose after it had been repeated a number of times.

The President replied that in his experience, when the amount was reached which produced the desired result, it did not become necessary afterward to pass that amount.

Dr. Andrew H. Smith said that his experience had been similar. He spoke of nitrite of sodium as possessing the advantage of producing more durable results.

Dr. Beverley Robinson said the opinion seemed to be general that there should be a high arterial tension before nitro-glycerine was indicated. This was a mistake. He had a case under his care then, in which there was a weak pulse, but not one of high tension. A cardiac stimulant was indicated, but digitalis and other drugs failed to produce the desired result, which was at last brought about by nitro-glycerine.

Dr. Kinnicutt fully concurred in this view.

The Surgeon-General of Illinois.—We hear and read much in these degenerate days of the improvement and purification of the Public Service, but it has been reserved for the present Governor of Illinois to show the estimate placed upon professional ability and experience by a thoroughgoing politician. The telegraph informs us that a young graduate of the Hahnemann Class of '87 has been appointed Surgeon-General by his Excellency Governor Fifer, to fill the vacancy caused by the death of General Matthews. The action of the Governor in selecting this inexperienced young person for so important a position is inexplicable on ordinary grounds.

Correspondence.

OUR BERLIN LETTER.

(From our Special Correspondent.)

THE ANNUAL PHYSICIANS' DAY—THE SPECIALIST QUESTION—THE DISPENSARY ABUSE AND ITS REMEDY—THE CONDITION OF THE GERMAN PHYSICIAN—A WARNING TO INTENDING MEDICAL STUDENTS—THE ADMISSION OF WOMEN TO THE UNIVERSITIES—INCOMES OF BERLIN PHYSICIANS—THE ECLAMPSIA BACILLUS—THE CHOLERA—THE COMING MEETING OF THE SOCIETY OF PHYSICIANS.

Berlin, July 11, 1892.

Besides the scientific congresses which convene yearly, we have an Annual German Physicians' Meeting, in which medical questions and ethics of the profession are discussed.

This congress took place this year at Leipsic, and, among other important topics, the specialist question was thoroughly discussed in a paper by Dr. Stimmel, of Leipsic. Among other things, the speaker held that specialism had developed certain phases which were disadvantageous not only to the ordinary practitioner, but to the public at large.

That specialists are necessary nobody would deny, and if they did not exist it would be necessary to create them. The polyclinics or dispensaries are an injury to the profession, and are of no advantage to the public since the creation of the Sick Fund.

The Medical Society of Leipsic resolved some time ago that only instructors in the different branches of medicine should be allowed dispensary duty, and this for the purpose of securing material for instruction only.

Since that time dispensaries in Leipsic seemed to have vanished. There are many physicians calling themselves specialists, as a sort of decoration, who try by the aid of a dispensary to enlarge their general practice.

An examination of specialists, which is really a desideratum, would do much to elevate the standing of the physician. Upon the results of such examinations the applicants could be divided into specialists of the first and second class. The institution of such a state examination would modify the number of specialists, and would tend to establish specialism upon a firm foundation.

The number of general practitioners would be thereby reduced, as the majority of young physicians would then strive to pass one or two examinations for the rank of specialist of the first or second class.

Dr. Becker, of Berlin, thought it would be manifestly unfair to forbid the young specialist, who had no reputation, from taking general cases.

Dr. Martin, of Berlin, proposed that a business committee of the Medical Society be instructed to publish yearly, about the time of the preliminary examinations in medicine, the true facts pertaining to the medical profession at that time, and to warn those who seek a livelihood from the practice of medicine to abstain from studying it.

The reasons for this, the speaker continued, were to be found in the laws authorizing the existence of medical insurance, whereby hundreds of thousands of patients go to a few privileged physicians. Six years ago the United Medical Societies warned the public concerning the difficulty of making a living from the practice of medicine, but this warning had evidently been without effect, for in the winter session of 1886–87 there were 7,788 medical students, and in the winter of 1891–92 there were 8,902. There has been, therefore, a decided increase.

In 1886–87, 998 candidates passed their examination and were admitted to practise. In the examination of 1891–92, 1,571 new physicians were graduated.

In the winter session of 1885–86, 442 physicians died. In the winter session of 1891–92, 452 physicians died. Added to this are 59 physicians who have either emigrated or have retired from practice.

In the year 1885, Germany had 46,500,000 inhabitants. In the year 1890 the population was 49 000,000. The former were attended by 16,692 physicians, the latter by 19,630.

In the year 1885, the ratio of practitioners to the population was $3\frac{3}{4}$ to 10,000; now it is 4 to 10,000. The population of Germany has increased since 1886–87, $9\frac{1}{10}$ per cent. In the same period the number of physicians has increased $15\frac{4}{10}$ per cent.

Six years ago, when this warning was sent out, there were 4,000,000 members of the Sick Insurance. To-day there are more than 6,000,000, and the membership is constantly increasing.

Besides these disagreeable facts there was, the speaker held, still another danger, viz., the agitation to permit women to study medicine. The Prussian Universities, which were questioned on this point for an opinion, replied in favor of admitting women. The only requisite is that they must possess a certain amount of preliminary education. If this last point is the only hindrance, we can naturally expect to see a great many women studying medicine.

In Berlin there are 1,615 physicians and 132 dentists, a total of 1,747. Of these there are 855 who do not have an income of 3,000 marks, or $750 per annum. There are 892 who do not depend on their practice for a livelihood; 150 have much less than 3,000 marks; 250 physicians have an income over 8,000 marks, and 170 over 10,000 marks. The number of physicians who get rich is very small indeed, while the number in debt is extremely large.

These disagreeable circumstances exist chiefly in Berlin, and the condition of physicians in the provinces is somewhat better, but not much.

The following resolution was adopted by the Society: "We desire to express the fact that the severe conditions of medical life do not warrant the increase of physicians in greater proportion to the increase in population."

A very interesting, and probably practical, discovery is that of the eclampsia bacillus by Dr. Gerdes, of Halle. Some time ago Gerdes called attention to the existence of a bacillus which he thought played an important part in the etiology of this disease. He now states that he has demonstrated the existence of colonies of this bacillus in the body of a patient who died from eclampsia.

The bacilli were found in the lungs, in the septum ventriculorum, in the placental areas, in enormous quantities, and in the liver and kidneys in smaller numbers. They did not exist in the spleen.

Gerdes was able to obtain pure cultures of the bacillus. This proves, he held, that eclampsia is an infectious disease. Numerous interesting questions have yet to be discussed in this direction, but Gerdes believes that the bacilli enter through the cells of the decidua as a result of endometritis, and are forced by the uterine contractions into the sinuses, and thence into the general circulation. The following were the conclusions of his paper: 1. The eclampsia bacillus is the only cause of eclampsia and is found in no other disease. Infection occurs through the uterus, most probably in consequence of an existing endometritis. 2. The causes of other forms of convulsions during labor are decidedly different, post mortem, from those giving rise to true eclampsia. 3. Eclampsia is an anatomically limited and characteristic disease. 4. The existence of the well-marked lesions found in eclampsia is not sufficiently explained by the mere presence of the specific bacillus. Most likely the direct or indirect causes are the toxin of the eclampsia bacillus.

The spreading of cholera from Russia to Prussian soil is feared, especially so since cases are reported from Paris. The German Government is carefully watching the progress of the disease in Southern Russia, and has established in Königsberg a sanitary commission to prevent any further advance of the disease.

We do not expect that cholera will force its way this year into Germany; but, owing to the good soil which the disease finds in Russia, it is still not improbable that it may spread. Luckily the mortality of the present epidemic is a relatively small one.

The programme of the Sixty-fifth Meeting of the Society of German Naturalists and Physicians, to be held in Nürnberg, September 11th to 17th, has been published. The meeting promises to be a very interesting one. Among those who are announced as readers of papers are His, Pfeffer, Hensen, Ziegler, Strumpell, Günther, Huppe, and others.

THE HEALTH RESORTS OF THE RIVIERA.

(Continued from page 203.)

IX.—San Remo.

(From our Special Commissioner.)

GARBAGE REMOVAL — THE DRAINAGE QUESTION — LEPROSY IN THE GENERAL WARDS OF THE OSPEDALE CIVICO —A TRIP TO ARGALLO, THE MOUNTAIN SOURCE OF THE DRINKING-WATER—THE NEW AQUEDUCT—FAULTY METHOD OF DOMESTIC WATER DISTRIBUTION—THE STABILIMENTO DEI BAGNI—THE PROJECTED CASINO OR KURSAAL—MEDICAL OPINIONS OF SAN REMO—OUT DOOR LIFE AND AMUSEMENTS—COST OF LIVING.

The slovenly method, still in vogue at most of the Riviera resorts, of dumping all kitchen refuse, ashes, leavings, etc., into the street is strictly prohibited at San Remo. Such matters are now put into receptacles and carted away at the expense of the city, the carts making two daily rounds, one early in the morning, and one in the evening. The arrival of the garbage-cart is announced by the blowing of a horn. It appeared to me that the removal carts really performed the purpose of their existence, a truly novel sight to New York eyes, where the original function of collecting has been so successfully perverted into one of bounteous distribution of their pleasing contents. But as Carlyle's schoolmate, Sandy Macpherson has said: "Mony things please the folk in Lun'on that wouldna gang doon in Glasgow."

At the present time San Remo possesses in some of the streets of the old town, as well as in the main thoroughfares of the newer quarters, a system of large-calibre, old-fashioned drains. These are intended to convey surface water only, and they all empty into the sea, either directly upon the shore or at a little distance beyond it. This is, of course, decidedly objectionable.

In the streets numerous gratings are seen, which are placed horizontally and take the place of culverts. As a matter of course much solid matter finds its way into these drains, and as flushing tanks are not employed, the cleansing is left to nature. There is no doubt that the heavy rainfalls of the spring and autumn months effect, periodically, a thorough enough purification of these canals; but for the greater part of the year they must be choked up with decomposing matter that at times poisons the atmosphere.

In this unsatisfactory state of affairs it is fortunate that the surreptitious connection of house soil-pipes with street drains (which is as universal on the Riviera as it is dangerous) has not yet been generally practised at San Remo. But surely some provision should be made for keeping those drains which now exist permanently clean and clear of accumulating rubbish. Drains are supposed to be conduits, and not depositories of filth.

As for the numerous mountain streams coursing through the town, such as the Torrente di Bernardo, della Foce, S. Francia, Lorenzo, S. Martino, but especially the large and central S. Romolo—which runs partly underground through the heart of the city—not one of them is free from the reproach of contamination. Laws against fouling the so-called torrents exist. But it would require more than one educational campaign, including the practical demonstration of self-interest, to wake up an ignorant populace to the necessity of keeping pure

these open water courses. Moreover, in spite of the recent establishment of six or seven public lavatories (*lavatorio publico*), the hereditary instincts of the washerwomen still send them by preference to the dirty streams. There they heroically attempt to clean their clothes in any gathering little pool. The result is that after a mild ducking in cold water, followed by the regulation violent pounding between two stones, the linen is apt to be rather the worse for its alleged wash. Let some philanthropist organize a Society for the Propagation of Modern Methods of Running the Laundry, and a long-suffering community will not begrudge him a monument.

The cesspools of San Remo are of two kinds, the *pozzi neri*, or cemented pits, and the *pozzi morti*, or earth pits. Both are, of course, objectionable in growing towns. In the old quarters, the house soil is merely allowed to collect in bins or barrels, which, when full, are carried to the olive forests for manure.

Plans and proposals for a new drainage system are much talked about just now at San Remo. But I found that considerable differences of opinion exist in regard to the propriety of establishing modern sewerage here.

Dr. Freeman, for one, does not hesitate to attribute the general good health of the place to the absence of sewers, which he regards as prolific carriers of infection. There is this to be said in defence of his position, viz., that unless house connections are properly made, public sewers may indeed become breeders of, rather than safeguards against, contagion.

But no valid objection exists to a system of sewerage that includes the provision of proper house cut offs, with vent-pipes for all traps, such, for example, as is now being established at Cannes.

To judge from the plans now under consideration at San Remo, and which the authorities kindly gave me an opportunity to study, I should say that the tentative way in which sewers are to be laid down at that place will at least afford an opportunity to practically test the efficacy of the new system, without plunging the tax-payers into needless expenditure that would be a hindrance to later extensions or improvements.

It is certainly satisfactory to note that a large main is to be immediately put down in the bed of the most objectionable stream, viz., the San Romolo, which will convey the sewage some hundred yards out to sea to the west of the harbor. Four other main collectors are also in contemplation, each one to take its contents hundreds of yards out to sea. The Rivo Berigo, the Torrente S. Francesco, S. Lazaro, and Rivo Rubino are the streams, taken in their order from west to east, which are to have these canals.

It would, of course, be preferable to construct one main collecting pipe for all these sewers, and empty everything at a safe distance from the town, either far to the east or to the west.

The original cost of construction would thereby be made rather greater. But sooner or later this system will have to be adopted, and it is open to question whether subsequent changes may not entail a heavier expenditure than the immediate adoption of the more radical plan. This, however, is a matter for engineers to decide rather than physicians. But, in any event, San Remo might profit by the mistakes of towns like Nice and avoid a blundering repetition of costly errors. As for the propriety of putting collectors in the beds of streams that run dry during the summer months, that also is a question for the engineers to grapple with.

Through the courtesy of Dr. Peracca, the Medical Director of the General Hospital (*Ospedale Civico-Mauriziano*), I had an opportunity of examining this institution, which is beautifully situated on the eminence just below the sanctuary of the Madonna della Costa. During that trying ordeal of her husband's last illness, the Empress Frederick paid a daily visit to this hospital, and never omitted to look from the Director's window on the picture of restful beauty spreading out before her tear-stained eyes. This spacious hospital appeared to be a clean and well-managed charity. But the feature of special interest to me was the presence in the general wards of four advanced cases of leprosy. Formerly over forty lepers, coming from all parts of Italy, and even from France, were cared for here. But the lepers have all died off or have been removed, and new cases do not now seem to occur. Leprosy is not considered in the slightest degree contagious here, and Dr. Peracca tells me that since 1846, when the close supervision of the leper colony began, nothing has occurred which could be in any way construed as pointing to contagion. When it is remembered what a hue and cry is raised in our country when some poor leper is hunted up (or run down) by the reporters, this demonstration of apparent harmlessness to others of that truly loathsome malady, ought to interest the medical experts of the lay press.

Through the courtesy of Signor Marsaglia, the well-known railroad contractor and one of the builders of the famous St. Gothard tunnel, an interesting excursion to the distant mountain springs of Argallo was undertaken. Sir Spencer Wells, who was spending a few days at San Remo on his way home from India, was one of our party. We were first taken in fine four-in-hand coaching style through Taggia, the birthplace of Ruffini, and other ancient villages in the valley of the Argentina, to the foot of the mountains. Here we were duly transferred to the tender care of orthodox mules and picturesque muleteers. A toilsome and sometimes perilous ascent was then effected, after a fashion most proper and becoming to so distinguished a party. For, in addition to Sir Spencer and the "American Medical Commission of the Congress of the International Association of the United States of the North" (which is the way they had me down for short, although I never intentionally wounded their feelings), all the local celebrities, members of the press, and representative people generally, had been invited to participate. There was a goodly number of us therefore. For it so happens that the type of perfect manhood in this last decade of our calumniated century rarely refuses the occasional free lunch that blossoms along the tortuous path of life.

It is unnecessary to expatiate on the varied beauty of the scenery which met the eye at every turn along our route. Nor will I enlarge on the novelty of many situations in which I unwillingly found myself, while fording mountain torrents, climbing rocky paths so narrow that one false step would have meant a fatal fall down a steep precipice, or zigzagging it up and down wildly romantic declivities, always on muleback, with the muleteer firmly guiding the brute by hanging on to his tail. Once, and once only, I purposely descended (I do not now recall the precise number of unpremeditated descents which I accomplished), and grasping the animal's rudder, a stumpy apology for a tail, I made a bold effort to steer my own long-eared craft. But the cunning beast knew the difference. And a moment later I did too. For when that sapient mule made his little hind-legged bow, I felt an irresistible impulse to describe a graceful segment of a circle through the pellucid atmosphere, and having regained my mental, moral, and corporeal equipoise, I found myself securely settled between two jagged rocks, that I had not until then recognized as part of my programme. After my disinterment I always gave the mule the benefit of every doubt. And from the way our henceforward harmonious efforts were rewarded by "getting there" on time, I am prepared to generalize as to the best method of treatment of an acute attack of mountain donkey. But I shall never be prepared to forgive my fellow-mulebackers the long look of unfeigned cheerfulness with which my extempore performance was received. Such mirth is poison to the pride of spirit and balmless to the lacerated flesh.

If I only knew how, I would willingly describe the character of the cold collation that our hosts had so bountifully provided for us in the little house of the guardian

of the springs, high up in the mountain fastness of Argallo, where, under the huge chestnut-trees, recent snow lay sprinkled in pretty little patches. The resources of Italy in caseous, vinous, carnous, and other edible and potable directions were probably never more forcibly brought home to the experimenting foreigner than on this memorable occasion. Soon everybody had a toast to offer, and everybody else gleefully responded. Sir Spencer remarked in mellifluous Italian, what I plagiarized into abstract French, and a German medico dislocated into what he said was English, and what the native Italian contingent all allowed was so—namely, that we, the grateful survivors, had "had a splendid time," and that the *acqua potabile di San Remo*, while good, was not as good as the various brands of their *vino molto bono*, nor as the huge slabs of conglomerate formation called *salani*, and those picturesque laminæ of an upper pleiocene stratum abounding in garlicky nummulites so innocently termed sausage. The glowing terms in which the local papers chronicled this memorable tour are likely to mark a distinct epoch in contemporaneous Italian journalism. And, if I am not mistaken, Sir Spencer will take England into his confidence through the columns of the London *Graphic*.

But the cream of all this literary milk naturally goes to the readers of the RECORD, as innate modesty compels me to reluctantly admit.

As for the main object of our visit, the inspection of the Argallo sources, a decidedly favorable impression was made upon us. The limpid water as it filters down the mountain sides, is caught up into a closed clay conduit and conveyed underground to a first reservoir, whence iron pipes take it to the city of San Remo. Numerous reservoirs are established along the course of the aqueduct, which is in itself a remarkably clever piece of engineering. The expense of this laborious undertaking, I am informed, was too considerable for the funds in the city treasury. And had not the far-reaching good-will of the wealthy brothers Marsaglia been enlisted in the work, it could not have been carried out. The water is conducted from an altitude of nearly twenty-three hundred feet, through miles of mountains, hills, and valleys, by huge U-shaped siphons, down to the level of the sea. The supply of water is so abundant that the unused overflow is said to be more than sufficient to serve as motive power for a plant to supply all the streets, buildings, and private houses of San Remo with electric light. In fact, a definite proposition to this effect has lately been made, and is now before the authorities.

San Remo having secured an over-abundance of excellent water, it would be supposed that every house was amply supplied therewith. This is, however, not the case. The way the water is penuriously doled out to most houses is quite faulty, though I am informed that the stinginess of landlords is chiefly responsible for so unsatisfactory a state of affairs. But the San Remo water is cheap enough and it ought to be much more freely dispensed than is now the case. Houses and villas at present have the usual leaden pipes connecting with the main, but only the officials of the water company regulate the supply, which, as already stated, is generally inadequate. Moreover, a tank is interposed between the main and the house hydrants, so that the really fresh mountain water is not *de facto* available. Simple and cheap water-meters would obviate the necessity for tanks, and yet permit the company to regulate the supply. Of course, new meters mean bigger bills, but when they are also synonymous with unlimited quantities of fresh water all grumblings ought to be suppressed.

I must here mention a decidedly dangerous arrangement which I have seen in some houses, namely, that of allowing an overflow pipe from the roof tank holding the entire supply of drinking-water to empty into the drains in the streets. A more deliberate bid for disease is not likely to be found anywhere. Fortunately most houses allow the overflow a safer exit.

In the analysis of San Remo drinking-water [1] 5,000 grammes of water contain: Organic substances, a mere trace; chlorine, 0.00065 gramme; sulphuric acid, 0.027 gramme; salts in solution, 0.08 gramme; insoluble salts (chiefly carbonate of lime), 0.35 gramme. Total inorganic matter, 0.43 gramme. The hardness of the water in 70 grammes is 19.5.

A large bathing establishment has recently been completed here, and warm sea-baths may now be taken throughout the winter season. Open-air bathing is not popular except during the heat of summer, when the foreign colony has departed, and a moderate influx of Italians occurs. The beach is a sandy one and has a very gradual incline, but one of the main drains empties near it, and the odoriferous gas factory liberally dispenses its peculiar smells in the neighborhood. On the authority of the Sindaco di Sanremo, I may state that the gas factory will be soon removed beyond the olfactory range of the bathers.

The San Remese are rather proud of their Casino—a magnificent new building; so new, indeed, that it has not yet been erected, save in the fervid wish of those friends of the place who know that judicious expenditure is apt to prove a profitable investment. The Mayor informs me that the building, when completed, will represent something like the "kursaals" of German watering-places, *i.e.*, a rallying-point for the foreign colony, where concerts, fairs, balls, and other entertainments will be provided. As gambling is to be strictly prohibited at this place, the Casino of San Remo will differ, in one important particular at least, from similar establishments elsewhere on the Riviera.

Families are to be attracted rather than repelled. The provision of wholesome entertainment without any taint of "games of chance" will doubtless make the Casino a welcome and popular institution, except among the more frivolous. But as the latter will naturally gravitate toward the green cloth of Monte Carlo, their disapproval will be creditable rather than otherwise. Spacious reading-rooms, salons de conversations, billiards, bowling-alleys are not to be forgotten.

There is a singular unanimity of opinion among medical and other competent writers relative to the advantages of San Remo as a winter health resort. In Dr. Hassall's works many excerpts from various authors will be found. I have made the subjoined selections, as embodying the gist of the information contained in the principal publications. Dr. Hassall himself has given the following fair *résumé* of the characteristics of the climate: "It is moderately warm during the winter, even in the shade, the temperature being fairly equable. It is very sunny; there are but few days on which the sun does not shine, and the duration of the sunshine is very considerable. In consequence of the power of the sun and the duration of the sunshine the air is for the most part clear, the sky bright, and there is abundance of light. There are but few days on which rain falls, and the air is moderately dry. Owing mainly to the sea and land breezes, the air is kept in movement day and night, and is consequently refreshing and exhilarating. The combined effect of these several characteristics is that the climate of San Remo is, during the winter season, moderately stimulant and decidedly tonic. A climate possessing the qualities above mentioned cannot fail to exert a very powerful influence on the functions of the body, for good or evil, in a great variety of diseases. Owing to the mildness of the climate there is less wear and tear and less strain. The several functions are performed in a more moderate and uniform manner. There

[1] The official document submitted to me bears the following superscription:

"CITTÁ DI SANREMO.

"Esame chimico delle acque potabili da condursi nella Cittá di Sanremo, che servi di base al contratto conchiuso col Signor Commendatore Giovanni Marsaglia par la conduttura delle acque d'Argallo, come da appositto documento esistente nell' archivio comunale."

being less expenditure of power and less waste, a smaller quantity of food is required, and the stomach has less work to do. The circulation, in particular the heart and its vessels, is exempt from the severe strains entailed by extremes of cold and heat, and which in themselves are often injurious, and not unattended with danger. The action of the sun on the human body is very complex; the effects are not confined to the warmth derived from its calorific rays; the luminous and chemical rays all exert powerful effects. The sun acts as a stimulant to most of the bodily functions: to elimination, secretion, and absorption; it determines many chemical changes, and promotes sanguification and the coloration or bronzing of the skin."

Dr. C. T. Williams has thus written: "The climate of San Remo is warm and dry, and from the protecting ranges not rising precipitously as at Mentone, but sloping gradually back, the shelter from the northerly winds is not quite so perfect as at the last-named place; at the same time the vast olive groves screen the locality from any cold blasts, and the breezes which filter through the olives impart a pleasing freshness to the atmosphere and remove sensations of lassitude often experienced in well-protected spots. The size of the sheltered area gives patients a considerable choice of residences, which can be found either close to, or at varying distances from, the sea, according to the requirements of the case."

Contrasting San Remo with other Riviera resorts, Dr. Prosser James says: "San Remo, with its warmer and more equable temperature, its calmer atmosphere, its tone-giving elasticity, its dryness and other attractions, must be preferable to any of the other stations in certain cases. These are, for the most part, those for which other localities are too stimulant."

The late Dr. Rose, who lived and practised for some years at San Remo, has thus written: "Its climate is intermediate between the east and west ends of Mentone, not so warm as the former, and more sheltered than the latter, the air being also more soothing than at Cannes, Nice, and Mentone. This depends on the fact that the ground is covered to the water's edge with orange, lemon, and olive trees, thus preventing too rapid evaporation, and the soil, being principally clay, prevents the rain percolating through so rapidly as it would in sandy and gravelly soil."

Finally, Mr. Aspinall has expressed the following views:

"San Remo has a delightful climate, so fresh and bracing and yet so balmy; there is even a certain amount of humidity in the air, especially at the east end of the town, which suits some invalids better than too dry an atmosphere. As far as my own experience goes I have not found any other climate from which I have derived so much benefit, though I have passed a winter in Madeira, another in Egypt, and shorter periods in Rome, Naples, and Sorrento. It combines in a modified degree the invigorating qualities of Nice with the warmth of Mentone, but without its closeness. There must be something peculiarly soothing and conducive to sleep in the air of San Remo."

It would be needless to further multiply opinions, as they are all composed in the same strain.

The walks in and about San Remo offer sufficient attractions to make them enjoyable, although there is not the great extent and variety found at Nice and Cannes. Mountain climbing and donkey rides may be profitably indulged in by the more robust. It is quite unfortunate that the railroad has been allowed to run close to the shore, as the town has thus been robbed of a sea promenade that might have rivalled the famous Promenade des Anglais at Nice. Excursions in carriages are less popular here than at other places, for the roads are dusty and offer few compensatory inducements in the way of beautiful views.

There is music three times a week in the Giardino Publico, and genuine Italian opera is done at the theatre. Garden parties, dances, teas, picnics, tennis, boating, sailing, and allowing ideas to sprout by "just sitting still" in the vivid fructifying sunshine, are all included in the category of fun and frolic at this place. I must not forget to mention that San Remo also boasts of several clubs, one of which is English. At the principal Italian club, the *Circolo Internazionale*, where several balls are given, foreigners on proper introduction are readily admitted.

The Carnival, the tail-end of which only I underwent, is not over-vigorous at San Remo, so that those who hanker after a really robust variety of that peculiar sport are referred back to Nice.

On the whole, however, the reproach sometimes levelled at San Remo of being hopelessly dull and tame is founded only in a taste for pleasures that a self-respecting health resort has no business to provide.

It has been repeatedly stated that living expenses were much lower in Italy than in France. That may be so. But the Riviera has its own particular tariff, whether you live east or west, in Liguria or in Provence. Housekeeping is, however, actually rather less expensive at San Remo than along the French Riviera. But this advantage is offset by a lower food standard, and by numerous petty vexations in regard to servants, which form a standing grievance here, although they undoubtedly promote fluency of conversation at social gatherings, where the ladies numerically predominate to a rather alarming extent.

First-class hotels, like the West End and the Hotel des Anglais, charge first-class prices, and I doubt very much whether Americans would be satisfied to remain long at any of the cheaper houses. If you have money to spend, life will be made comfortable enough for you here. But if you go there for the sake of economy, you will wish you hadn't before the end of the season.

THE BRITISH MEDICAL ASSOCIATION.

(From our Special Correspondent.)

NOTTINGHAM, July 29, 1892.

THE Sixtieth Annual Meeting of the British Medical Association closed its sessions here to-day. The Association is now getting to such a respectable age that it is the exception—rather than the rule—for an annual meeting to be held in a town not previously visited. One reason for visiting towns a second time is no doubt to be found in the fact that the increasing numbers of those who attend the annual meetings render it necessary to select a town for the annual meeting where there is ample accommodation for the members and suitable rooms wherein to hold the meetings. This is the second time the Association has met in Nottingham.

The First General Meeting took place Tuesday morning, July 26th, at half-past eleven. The chair was taken at first by the President, Dr. J. Roberts Thomson, of Bournemouth, who signed the minutes of the preceding Annual Meeting and then vacated the chair in favor of the President-elect, Mr. Joseph White, of Nottingham. The usual vote of thanks to the retiring President was carried, and he was elected a Vice-President for life. The report of the Council was then presented and adopted. In seconding the motion to adopt the report, Sir William Moore spoke with favor of the proposal to admit women doctors into the Association, and his remarks on this head were well received by the audience. Dr. Rentoul asked for more information as to how the amount (five thousand pounds) put down for editorial expenses was expended. Dr. Drage complained of the Council speaking in the name of the Association without consultation with the branches. The adoption of the report of the Parliamentary Bills Committee was then moved by Mr. Ernest Hart, who drew special attention to the grievances of the Irish dispensary medical officers. Dr. Walter Smith, of Dublin, contended that the English district medical

officers had as much of a grievance as the Irish. The report was adopted. Dr. Norman Kerr moved the adoption of the report of the Inebriates Legislation Committee. Dr. Usher, of Melbourne, seconded the motion, which was agreed to. Surgeon-Major Pringle drew attention to the evils of intoxication from other causes than alcohol, as from opium or chloral, and the necessity of dealing with them. Surgeon-General Cornish presented the report of the Committee on Scientific Investigation into the Condition of School Children and moved its adoption. The Committee had, in conjunction with a committee of the Charity Organization Society, conducted an investigation into the physical and mental condition of 50,000 children. The correlation of visible signs with low nutrition and mental dulness had in many cases been demonstrated. The report of the committee appointed to investigate hypnotism was then presented. The committee reported that they had satisfied themselves as to the genuineness of the hypnotic state, but that no phenomena which had come under their observation supported the theory of animal magnetism. They thought hypnotism could relieve pain. After some adverse criticism on the report, an amendment was finally carried referring it back again to the committee.

The second session was held at half-past eight in the evening. After introducing to the meeting a number of foreign members, delegates, and guests, Mr. White delivered his Presidential Address. (See p. 168.)

A vote of thanks to the President for his address was moved by Professor Hingston, of Montreal, seconded by Sir Frederick Bateman, and briefly acknowledged by the President.

The report on Railway Servants' Eyesight was then presented by Dr. Mackey, of Brighton, and that on Anæsthetics by Mr. Victor Horsley, F.R.S. Surgeon-Lieutenant-Colonel Ince then moved a resolution deprecating the payment of the travelling expenses of the members of the Council. After some discussion this was lost, and the meeting terminated shortly before eleven o'clock.

The various Sections commenced work Wednesday morning.

In the afternoon the Second General Meeting took place. The first proceeding was the reading by the General Secretary of the list of members elected by the branches to serve on the Council for the ensuing twelve months. The President then announced that the Council had received an invitation from Newcastle-on-Tyne to hold the next annual meeting in that town. It was resolved that the invitation be accepted, and on the motion of Dr. Withers Moore, seconded by Mr. Wheelhouse, Professor Philipson was elected as the successor to Mr. Joseph White in the presidential chair.

Professor Cuming, of Belfast, then delivered the Address in Medicine, selecting as his subject "The Position of Medicine in the General World of Thought and in Relation to other Sciences." (See page 169.)

The Third General Meeting took place on Thursday afternoon. The first item on the programme was a proposal to alter a by-law of the Association made fourteen years ago, whereby women were to be excluded from joining the Association. This was brought forward by Dr. Galton, seconded by Mrs. Garrett Anderson (the only lady member at present), and supported by Mr. George Brown, Surgeon-Major Pringle, Surgeon-General Cornish, and others. It was finally carried by a large majority, but the alteration has to be confirmed by a Special General Meeting to be held next month before it will become binding.

The Address in Surgery was then delivered by Professor Hingston, of Montreal, Canada. (See page 168).

The usual vote of thanks was proposed by Mr. Lawson Tait, seconded by Mr. Croft, and carried amid applause.

The Fourth, and concluding, General Meeting was held on Friday afternoon. At this session the Address in Bacteriology was delivered by Dr. G. Sims Woodhead. (See page 170.)

The usual vote of thanks was passed to Dr. Woodhead for his address, on the motion of Surgeon-Colonel Harvey. A resolution affirming the necessity of continuing and extending experiments on living animals was then moved by Mr. Jonathan Hutchinson, seconded by Dr. Ransom, and carried unanimously. Certain resolutions on the subjects of cremation, hypnotism, and the examination of school children, which had been passed last year in the meetings of Sections, were also confirmed. Votes of thanks brought the proceedings to a close.

I must add a few lines about the Annual Museum As usual this was very extensive and filled a considerable amount of space. In the pathological department Dr. Colcott Fox and Dr. Radcliffe Crocker exhibited a number of interesting colored drawings of various cutaneous affections, and Dr. Byrom Bramwell sent a number of graphic illustrations of disease. A number of specimens from the West Riding Lunatic Asylum were on view. I noticed particularly a specimen showing erosion of the vertebræ by an aneurism, to which a memorandum was attached stating that the patient was a gymnast up to the time of his death.

A small Sanitary Exhibition was also on view, which was unconnected with the British Medical Association. This consisted almost entirely of exhibits illustrating drainage and sewerage. I noticed two exhibits demonstrating how lead pipes can be used with safety for water supply. One of these was not novel, block-tin being used to line the lead pipe, but the other was rather ingenious, a collodion compound being applied to the interior of the pipe as a protective.

PLAN FOR A SELF-SUPPORTING SOCIETY FOR THE SUPPRESSION OF THE ABUSE OF MEDICAL CHARITY.

To the Editor of the Medical Record.

Sir: I would suggest the following as a scheme for the organization of a society to repress the dispensary evil. The society shall have at each dispensary a clerk whose duty it shall be to fill out certain blanks and obtain the signatures to them of applicants for medical charity, and who shall have duties covering a certain district of the city.

Blank No. 1.

Name ....., Address ....., Age ...., Occupation ....., Income when employed ...., When last employed ...., Number in family...., Value of property owned by applicant or responsible relative ...., What is the largest amount that you or your family can pay for the treatment you desire, $ .... per week, $ .... per visit? Could you pay in the future ....?

To whom can you refer to verify the above statement:

Name ..... Address where he can be found at ..... o'clock.

I hereby declare the above true to the best of my knowledge and belief.

Signature of applicant for medical charity:

....

I know the person named above and believe the above statements to be true.

Signature of person named as reference:

Name ....., Address .....

Blank No. 2.

In consideration of medical treatment received at an institution under the supervision of the Society for the Prevention of the Abuse of Medical Charity, I agree to pay to said society $.... on demand of an agent of said society.

Signature of patient .....

The amount to be inserted is to be equal to what a physician treating the case in his office would charge a similar patient for a similar service.

The above note is only to be enforced in case of fraud.

The city would be divided into districts, each under the care of one of the dispensary clerks, whose duty it would be to verify the addresses of applicants from his district, to obtain the signatures of references, and to report to an investigation department of the society such cases as seemed to require investigation, said clerk to receive a percentage of money recovered from cases reported by him for investigation.

The work of the dispensary clerks would thus be chiefly routine, and they would not command high salaries.

The investigation department would be under the control of men of known good judgment, or this work might be entrusted to the Charity Organization Society. When fraud was detected the notes in the hands of the society would be collected by the usual legal methods and the proceeds used for the support of the society.

If there were a surplus it might be used to buy whiskey for the men and fine clothes for the women who might be deprived of these luxuries when compelled to pay their doctors. Or a "law dispensary" might be started where all comers would receive free legal advice, thus giving another learned profession the benefit of a dispensary system.

The working of the society would be as follows: The clerks would fill out Blank No. 1 for each new applicant, and see that each patient signed Blank No. 2, and that the physician inserted the value of the services rendered. At the close of dispensary hours all these papers would be sent to the society's office, where Blanks No. 2 would be filed and Blanks No. 1 sent to their respective districts for the preliminary work by the dispensary clerks. Anyone giving false information or able to pay doctor's fees would be reported to all the dispensary clerks, and in case he should apply a second time the clerk of the dispensary to which he applied would report him to the proper dispensary authority as not a fit subject for medical charity. Cases desired for clinical purposes could be given passes admitting them to free treatment.

Louis F. Bishop, A.M., M.D.

24 East Forty-first Street.

WOMAN'S BRAIN.

To the Editor of the Medical Record.

Sir: There is a fallacy in Sir J. Crichton Browne's comparisons of the weights of the male and female brains which ought not, I think, to pass unnoticed in an article of its pretensions to scientific accuracy. He compares the height of men and women with the weight—that is, the mass—of their brains. But it is one of the first principles of mathematics that the mass or bulk of similar bodies varies as the cubes of their corresponding dimensions. If, for instance, we suppose a man four feet, and another eight feet in height, similarly proportioned in all respects, every organ of the latter, including the brain, should weigh, not twice, but eight times as much as of the former.

He gives the average heights of the sexes, as shown by his measurements, as 1.702 metre for men, and 1.575 metre for women. The respective cubes of these dimensions are 4.913 and 3 852, a difference of 27.7 per cent. of the latter number in favor of the male. This is not, I think, very far from the actual difference in body-weight of the sexes, allowing for the state of nutrition. But the difference in brain-weights is only 127.68 grammes, or 10.44 per cent. of the average weight of the female brain. The comparison, so far as it has any value, is decidedly in favor of the latter.

W. L. Worcester, M.D.

Little Rock, Ark., July 12, 1892.

THE REQUIREMENTS FOR MEDICAL PRACTICE IN FRANCE.

To the Editor of the Medical Record.

Sir: An item in the Medical Record some time ago leads me to write concerning the legal regulations of medical practice in France. It was intimated that the tendency of French legislation is to prohibit the practice of medicine by foreign doctors in this country, and the writer spoke of retaliation in case of a continuation or enforcement of this rule.

Perhaps it would be well to examine the conditions that govern the medical profession in France, and then, knowing our subject, see if there is any injustice in them toward foreign applicants.

To understand fully the position of a medical school in this country, it must be remembered that the entire educational system of France is organized and administered by the state. The professional schools are the culmination of its liberal education; and consequently the student, commencing the alphabet in the public schools, mounts in grades through college, where he takes his bachelor degrees and continues his superior education under the direction of the state.

The doors of a medical school in France are closed to every candidate for "Doctor of Medicine" who cannot present his diploma of "Bachelor of Letters," and also of "Bachelor of Science," which give him the right to enter. The position of the state is that medical studies and subsequent practice call for preliminary ability and training, as a proof of which the above diplomas are exacted. The insistence of the best medical men in the United States upon the necessity of a higher standard of medical education endorses this position of the French Government.

The work of the medical school is divided into four years of forty weeks each.

The candidate for M.D. must therefore be provided with the degrees of B.L. and B.S.; must have followed regularly the lectures, demonstrations, dissections, laboratory exercises, and clinics for four complete years; have passed all examinations required in the course without a failure, and besides, must furnish certificates of two years' uninterrupted service in the hospitals, commenced *after* two years of medical study. No less than two hundred and eighty four days are accepted for each year. In addition, thirty days' service in the lying in hospitals, with a certificate for actual deliveries performed by the student are exacted for every candidate for M.D.

This amount of work carries a student over into his fifth year, when he is allowed to present himself for his final examinations, seven in number. After the successful completion of these, the candidate presents, publishes, and sustains a thesis, which gives him the coveted diploma. Few students are able to finish their medical studies in five years.

The state, indeed, requires much of the candidate before allowing the practice of medicine, but in return its diploma means a great deal. The doctor is the production of state education, therefore his duties are official and his protection is the state, from which comes his authority. It is in this spirit that the laws regulating the practice of medicine are enacted. Justice to the men who have accomplished the work required for M.D. here, demands that men who have done less work, or had a less costly and thorough education, be not allowed the same privileges without giving the same proofs of ability.

The following are extracts from the new laws passed by the Senate in March and April, 1892:

Article I. No one can practise medicine in France if he is not furnished with the diploma of M.D., delivered by the French Government in consequence of examinations undergone in a government institution of superior medical instruction.

Article II. No one can exercise the profession of dentist if not furnished with a diploma of M.D., or of

surgeon-dentist (D.S.). The diploma of D.S. will be delivered by the French Government after studies organized according to regulations given by advice of the Superior Council of Public Instruction, and after examinations undergone in a government institution for superior medical instruction.

ARTICLE III. Midwives can only practise their art of accouchement if they are provided with a diploma of first or second class delivered by the French Government after examinations undergone in a medical school.

A decree according to the advice of the Superior Council of Public Instruction will determine the conditions of previous training and the programme of study applicable for the candidates for midwifery.

ARTICLE IV. Midwives are forbidden to employ instruments or medicines without the presence of a doctor (exceptions provided for); but are authorized to vaccinate and revaccinate against the small-pox.

ARTICLE V. Doctors, surgeon-dentists, and midwives, provided with a foreign diploma, whatever may be their nationality, can only exercise their profession in France upon the condition of having obtained the diploma of M.D., D.S., or that of midwife, in accordance with the dispositions provided for in the preceding articles.

Certain dispensations from preliminary examinations can be accorded by the Minister of Public Instruction, in accordance with a regulation of the Superior Council of Public Instruction.

ARTICLE VII. Foreign students who present either the diploma of M.D. or of D.S., or pupils of foreign nationality who present a diploma of midwife of first or second class, are submitted to the same rules in regard to scholarship and examinations as the French students. Moreover, there can be accorded to them, in view of instruction in the faculties and medical schools, either the equivalent of the diploma or certificates obtained by them abroad; or the dispensation of the French grades required for this inscription, as also partial dispensations of scholarship corresponding to the duration of the studies completed by them abroad.

ARTICLE IX. Doctors of medicine, surgeon-dentists, and midwives are required to register, *without expense*, their title at the prefecture, sub-prefecture, or at the registry of the Civil Court of their district during the month which follows their establishment in the district.

A change of residence to another department involves a new registry of the title within the same period of time. Those who not having practised for two years, wish to recommence the exercise of their profession, must again register their title, under the same conditions.

It is forbidden to anyone to exercise the above professions under a pseudonym, under the penalty for illegal practice of medicine.

ARTICLE X. Every year in each district lists must be made out by the prefect or judicial authority; the said lists to bear the names, place of residence, and date and origin of the diploma of every doctor, surgeon-dentist, and midwife controlled by the present law.

These lists are posted during the month of January of each year in all of the counties of each district. Certified copies are transmitted to the Ministers of the Interior, of Public Instruction, and of Justice.

The statistics of the *personnel* of the medical profession in France and its colonies is drawn up every year under the care of the Minister of the Interior.

ARTICLE XV. The functions of medical expert in a court of law can only be filled by doctors of medicine of French nationality.

ARTICLE XVI. Every physician, health officer, and midwife is required, upon establishing the diagnosis, to declare to the public authority all cases of contagious disease under his observation.

ARTICLES XVII. to XXXVIII. determine the penalties for infringement of these laws, in fines varying from twenty to one thousand dollars, and in imprisonment from six days to one year, or temporary suspension from practice. Criminals cannot pursue the course of medical instruction, or if already in practice have their diplomas revoked, and can no longer practise their profession.

These laws go into effect one year after their enactment.

WILLIAM S. MAGILL, A.M.
26 RUE DUROC, PARIS, FRANCE.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending August 13, 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	30	12
Scarlet fever	55	10
Cerebro-spinal meningitis	0	6
Measles	115	7
Diphtheria	47	17
Small-pox	19	7
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0
Mumps	0	0

A Statue to Ricord.—The world owes a debt of gratitude to the man who, by his labors in the investigation of syphilitic diseases, confirmed (in 1838) Benjamin Bell's views (dating from 1793) as to the non-identity of gonorrhœa and syphilis. It was not to be expected that Ricord's name and fame would be allowed to remain unrecognized, and the Paris Municipal Council have authorized the placing of his statue on a spot in the Boulevard de Port-Royal, exactly fronting the Hôpital du Midi, the scene of his labors and teaching for thirty years. The statue, due to the chisel of M. Barrias, is now on view at the Salon. Its existence is due to the exertions of a committee who undertook the charge of a subscription raised by his pupils and friends. I last saw Ricord on the occasion of the funeral of Béclard, late Dean of the Faculty. He was then a decrepit old man, nearly bent double. Not very long after his own remains were escorted, with equal pomp, from his well known residence in the Rue de Tournon—a stone's throw from the Faculty—to their last resting-place. Some of his quaint sayings deserve to find a permanent place in treatises on the branch of medicine so intimately associated with his name. Who could forget that the lymphatic gland situated the nearest to a hard penile chancre was larger than the rest of the inguinal group, when he christened it "Le Préfet de l'Ain" (*aîne* = groin)? The atrophied remains of a syphilitic testis he wittily described as a "haricocèle," from its resemblance to a bean or pea. It is such little touches as these that reveal the good and successful teacher.—Cor. *London Lancet*.

BOOKS RECEIVED.

REGIONAL ANATOMY. By George McClellan, M.D. In two volumes, 4to. Vol. II., 414 pages, illustrated. J. B. Lippincott Co., Philadelphia, Pa.

A TREATISE ON DISEASES OF THE NOSE AND THROAT. In two volumes, 8vo. Vol. II., 832 pages, illustrated. Price, cloth, $6.00; sheep, $7.00; half morocco, $8.00. William Wood & Co., New York.

DISEASES OF WOMEN. By F. H. Davenport, M.D. Second Edition. 8vo, 323 pages, illustrated. Lea Brothers & Co., Philadelphia, Pa.

A NEW PRONOUNCING DICTIONARY OF MEDICINE. By John M. Keating, M.D., and Henry Hamilton. 8vo, 818 pages. Price, cloth, $5; sheep, $6. W. B. Saunders, Philadelphia, Pa.

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Original Articles.

THE NEW ROME AND THE QUESTION OF ROMAN FEVER.

BY EDMUND CHARLES WENDT, M.D.,

NEW YORK.

EVERY person of culture has probably, at one time or another, experienced a distinct desire to see Italy. And, indeed, what higher intellectual treat could well be provided than a holiday judiciously spent in that ancient land? That this is a mere truism is attested by the fact that, despite her reputation for insalubrity, thousands upon thousands of foreigners, year after year, continue to flock to Italy. It has almost come to be part of a liberal education to examine all her natural beauties, and to seek fresh inspiration by a study of those marvellous treasures pertaining to history, literature, science, and especially to art, which no other country possesses in like degree and number.

As for Rome itself, the eyes of the world have ever been directed toward the Eternal City. And this commanding position was freshly emphasized when, in 1870, the ancient town of Romulus became the capital of the new United Italy. Ever since then a distinctly modern life has been infused into the sluggish current of her existence. Even the outward appearance of the city has changed under the stimulus of a grand national revival. It is true the archæologist, the historian, the poet, and even the lover of art, have not looked on without dismay; for, although by no means completed, the process of modernization has already effaced many a cherished memento of the past, and thus robbed Rome of some of her ancient glory. Everywhere crumbling ruins and mouldy piles of dilapidated masonry have been replaced by those commonplace modern structures which the demands of a practical age have set up in all the larger towns of the civilized world. But sanitation is divorced from sentiment, and from a purely sanitary point of view there is surely nothing to regret in a transformation which substitutes healthful modern dwellings for the dangerous and scarcely habitable houses of by-gone centuries.

But quite apart from its permanent interest to all classes of men, Rome will soon receive the special attention of physicians, owing to the International Medical Congress which is to meet there in 1893. Under these circumstances some account of the city, from a medical point of view, may be of interest to the profession in America, more particularly as the bugbear of "Roman fever" is responsible for an exaggerated dread concerning the unhealthfulness of its climate, which most physicians share with the laity.

My personal observations and studies in Rome extended over a period of less than three weeks, and it is not pretended that they were at all exhaustive.

In fact, as will be seen later on in reference to several matters, and especially touching the vexed question of Roman fever, I have preferred to trust to the experience of able local authorities rather than to hazard opinions based on necessarily imperfect observations.

Of course, in some respects, a foreign physician may have a clearer judgment of local affairs than an old time resident. Yet one cannot expect to do justice to a large city, and certainly not to Rome, in the short space of a few weeks. I have, therefore, suppressed all except the most essential information.

Clean Streets.—The first thing that favorably impresses the stranger, especially if he happens to be a New Yorker, is that Rome is a clean city. There are few wide streets, except in the essentially new quarters, and the paving is far from good. Nevertheless, the admirable cleanliness of even the smaller and less important avenues shows that an efficient system of street cleaning and garbage removal is now in force. New York has much to learn from Rome in this matter.

Disgusting Public Urinals.—But in spite of clean streets disagreeable odors are far more frequent than they have any right to be. These odors for the most part arise from the public urinals, which everywhere disgracefully obtrude their obnoxious presence upon normal eyes and nostrils. The Romans have the most frank and astonishing disregard of the common proprieties of civilized life, in the matter of relieving themselves of their surplus renal secretion, which it is possible to imagine. And I may remark in passing, that the same indecency is found repeated in all the principal Italian cities, with the single exception of Milan. In almost every side street, and usually but a few steps beyond the teeming thoroughfares, these countless urinals have been introduced. With few exceptions they are malodorous, disgusting, public nuisances. Fancy wedge-shaped shallow clefts sunk into the walls of the houses and unprovided with even the pretence of a covered approach. It seems incredible that such barbarous stench-breeders should be allowed to remain in a large modern town, where civic pride is not altogether unknown. I can account for the anomaly only on ethnological grounds, the Latin view of public decency being a much broader one than prevails in Anglo-Saxon lands.

Purity and Abundance of the Drinking-water.—Turning next to the water-supply of the city, a very satisfactory state of affairs is found to exist. For the drinking-water of Rome is clear, pure, and tasteless. It is supplied in practical over-abundance, and is without doubt a potent factor in maintaining the present standard of health of the city. The water is conducted in several well built aqueducts, the sources of supply being located miles away from the city. The water is rather hard, however, and while the natives and residents take it with impunity, a stranger may experience some temporary discomfort during his period of acclimatization. The chief aqueducts running into Rome[1] are *la Vergine*, *la Felice*, *la Paola*, and *la Marcia*. Among the minor sources of supply are the *Sallustiane*, *Argentina*, *Api*, *San Damaso*, *Grillo*, *San Felice*, *del Sole*, *la Lancisiana*, and *l'Innocenziana*. But these waters include those of the entire "*Comune di Roma*," although I have not mentioned all of them.

It is unnecessary to present a detailed account of the chemical analysis of these waters. It has been found that, barring the hardness already alluded to, there is no ground for complaint.

Bacteriological examinations were also made by Professor A. Celli, of the Institute of Hygiene of the University of Rome.[2] The results were in the main satisfactory. But some of the local suburban waters were found to be suspicious, and certain well-waters were pronounced decidedly impure. All such waters have been, or will be, entirely suppressed. All the subsoil waters were, however, found to be germ-laden.

[1] Risultati dell' Inchiesta sulle condizioni igieniche e sanitarie. Roma, 1886.

[2] Bolletino della Com. speciale d' igiene del municipio di Roma.

To give some idea of the quantity of potable water now carried into Rome, the following figures may be adduced. In twenty-four hours the Vergine supplies 80,000 cubic metres, the Paola, 40,000, the Marcia, 108,000. Moreover, the authorities state that these quantities could be easily doubled, so that for all time to come an abundance of unimpeachable drinking water is assured to the citizens.

Drainage Imperfections.—Hundreds of fountains play day and night in Rome, and one would naturally suppose that with all this enormous flow of water the drainage problem would have been satisfactorily solved there long ago. This is not the case, however, and in the matter of sewage disposal, and especially in all that relates to sanitary house fixtures, Rome is still far behind the age, if the best Anglo-American standard is used for comparison.

Mr. W. J. Stillman, the able correspondent of the London *Times*, who kindly placed at my disposal much valuable information culled during his thirty years' residence in Italy, has indeed assured me that cesspools no longer exist in Rome, and that the drainage of the town now approaches perfection. But with all due deference to his ripe experience in sanitary matters, I must emphatically dissent from so optimistic a view of the present condition of Rome. Much has been done since the authorities have busied themselves with this vital sanitary problem, and to an old resident the changes will naturally appear very great. But the new-comer cannot avoid observing that much more remains to be done.

The new Tiber embankment, when completed, will doubtless be a long step in the right direction. But what Rome needs above everything else is a complete reformation of her system of house plumbing, including the proper ventilation of soil-pipes, the introduction of traps, the disconnection of house-pipes from main drains by modern methods—in a word, the radical transformation of present arrangements.

It is quite true that many of the better class of hotels and dwelling-houses are now supplied with clean-looking, modern English cabinets, which apparently answer every hygienic requirement. But the Roman sanitary engineers have not yet learned that more than this "surface trimming" is needed to reform obsolete house-drainage methods.

As for the absence of cesspools, I will at once admit that such dangerous old pits as are found in Florence and elsewhere, I have not personally discovered in Rome. But many houses have square receptacles situated in the courtyard, which appeared to me to be cunningly contrived breeders of noxious stenches, while immense pipes (in some instances of such ample calibre as to admit the body of a man) very successfully convey foul gases to the apartments of the residents. It is alleged that these receptacles are frequently emptied and cleansed, and that they really serve as cut-offs from the main sewers. I can only say that those boxes which I inspected were actual receptacles of filth, that ought not to have been allowed to accumulate for a single hour of the day. Moreover, in spite of the abundance of water, the flushing arrangements are often primitive, and the water is thus needlessly wasted. Evidently a little English missionary work in the direction of enforcing the introduction of sanitary plumbing would not be wasted in Rome. Eight years ago Mr. Hart wrote in the *British Medical Journal* as follows:

"Most of the best and newest hotels are indeed provided with excellent cabinet fittings, but this is delusive and incomplete unless the ventilation and disconnection of the soil-pipes are carried out. This is the more important in Rome, because the main sewers are mostly of a labyrinthine character and Brobdignagian proportions. In some places they are connected with the vast ancient cloacæ, and it is certain, from their form and size, that they must be very largely elongated cesspools of deposit rather than sewers of transit. Under these circumstances it is conceivable that the more modern and complete domestic arrangements for water-carriage adopted in the hotels become sources of danger, by providing also for a more abundant reflux of sewer-gas, which the heating of the corridors sucks into the atmosphere and disperses throughout the building."

These criticisms apply to-day with even greater force than they did in 1884, owing to the large increase of population.

Rome's sewage is discharged into the Tiber, and the numerous evils incident to floods or an abnormal lowness of the river water will be done away with when the really fine granite embankments are completed. It is to be hoped that the financial straits of the Italian Government will not seriously hamper the completion of this necessary, though costly, undertaking.

Health, Disease, and Mortality.—In spite of the imperfection of its drainage system, and a still excessive mortality from malarial diseases, Rome is at present the healthiest city in Italy, and one of the healthiest cities in all Europe. This surprising statement is not based merely on the concurrent testimony of the leading physicians of Rome. It is clearly shown by a study of the bulky but eminently trustworthy Government reports. From the *Annuario Statistico di Roma*, published in 1890, the following tables have been compiled. For purposes of ready comparison the death-rate of the principal Italian towns is placed side by side with that of other European cities. (St. Petersburg is also included in the table.)

General Death-rate per 1,000 of Italian and Foreign Cities.

Italian cities.	1885.	1886.	Foreign cities.	1885.	1886.
Rome	23.6	20.0	Buda-Pesth	29.4	39.4
Padua	27.6	37.4	Marseilles	39.0	35.0
Bologna	27.3	32.6	St. Petersburg	28.9	30.6
Venice	31.6	32.6	Hamburg	26.0	29.3
Verona	28.1	31.9	Vienna	27.9	26.2
Genoa	27.1	30.1	Berlin	24.8	25.8
Naples	28.5	29.6	Paris	23.6	24.6
Milan	29.1	29.5	Liverpool	23.7	23.7
Florence	27.0	28.6	Amsterdam	24.0	23.6
Turin	25.4	24.6	Copenhagen	20.7	23.2
Leghorn	22.2	25.9	Lyons	23.3	23.0
Messina	29.8	23.9	Brussels	21.6	22.9
Palermo	36.7	20.5	London	17.1	19.8

Italian Lack of Sanitation.—That Italian lack of sanitation is still responsible for many unnecessary deaths cannot be seriously questioned. And it is all the more creditable to Rome, therefore, that in spite of the negligence of the ignorant masses, a material improvement has of late years become manifest in the general health of the city.

A glance at the following table will show the deplorable loss of life from zymotic and paludal diseases for the kingdom at large. It is made all the more apparent by comparison with England and Wales, these countries having a population about equalling that of Italy.

The figures are for one year only, viz., 1887.[1] But they are more eloquent than words.

Number of Deaths Resulting from Various Diseases in Italy and England.

Disease.	Italy.	England and Wales.
Scarlet fever	14,631	7,859
Diphtheria and Croup	28,273	8,422
Typhoid fever	27,273	5,662
Malarial fever	21,033	193
Cholera	8,150	462
Small-pox	16,219	506

In place of lengthy descriptions of the occurrence of diseases and their seasonal prevalence, the subjoined

[1] See Nineteenth Century, March, 1892. Article *Italia non fara da se.*

tables may be profitably studied. A glance will show that Rome is at its worst during the very time when it is most crowded with foreign visitors and tourists. But fashion has ever been a more formidable power than mere health.

Table Showing Number of Deaths from Principal Diseases (except Malaria) at Rome.

	Typhoid fever.	Small-pox.	Contagious pneumonia and acute catarrh.	Other diseases of the respiratory organs.	Diphtheria.	Malarial fevers and chronic affections from malaria.	Enteritis, diarrhœa, indigestion. Cholera.
January.....	11	47	116	100	32	36	23
February.....	10	37	96	80	31	24	36
March.....	10	44	138	71	20	35	43
April.....	11	32	78	41	12	23	30
May.....	8	38	82	40	10	22	56
June.....	12	23	57	31	8	24	74
July.....	7	20	47	27	4	33	112
August.....	12	16	23	11	10	30	93
September....	16	24	30	11	5	28	85
October.....	25	49	29	21	6	35	87
November....	21	67	46	39	17	34	77
December....	27	79	92	57	9	29	61
Total.....	170	476	834	529	164	353	777

Table Showing General Mortality at Rome during Fifteen Years, 1872–86. Divided by Months.

	Daily Averages.												
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November	December.	Total
Year, 1886	32.6	32.4	33.4	24.6	22.7	21.2	23 3	19.7	20.0	22.8	25.9	27.7	25.5
Year, 1885	27.5	24.7	22.6	20.4	20.2	21.1	25.3	24 4	21.6	22.7	22.0	30 1	23.5
Daily, 1872–85	28.6	28.9	27.3	24.2	21.7	21.8	23.4	22.4	21.2	22.1	24.1	26.5	24.3

Fatal Malaria.—To the courtesy of Mr. W. J. Stillman I owe the compilation of the following painfully instructive figures, showing that while the mortality from malaria is on the decrease in Rome, it is still decidedly high. The significance of this table is enhanced when it is remembered that the population of the commune of Rome has risen rapidly from about 280,000 in 1881, to something like 450,000 in 1891.

Thus there is observable in this period an actual decrease of malaria, which, taken in conjunction with the growth of population, is to some extent reassuring as to the future of Rome in this particular.

And further, it is only fair to state that the suburban population is much more responsible for this mortality than the dwellers in the city. The malarial peasant invariably goes to Rome to die, even if he took the fever scores of miles away. It is this influx of outsiders that helps to swell the death-rate of the city, and may lead to erroneous conclusions.

Table Showing Number of Deaths from Malaria in the Commune of Rome.

Year.	Permanent Population.					Adventitious Population.					Combined total.
	In private houses.	In public institutions.	In prisons.	In other places.	Total.	In private houses.	In public institutions.	In prisons.	In other places.	Total.	
1881.....	319	67	..	1	387	63	191	7	2	263	263
1882.....	257	67	1	..	325	30	135	15	..	189	514
1883.....	276	56	1	2	335	35	97	20	..	153	488
1884.....	212	54	1	..	267	43	75	6	..	122	389
1885.....	246	37	..	..	283	41	66	15	..	122	405
1886.....	193	25	2	3	225	53	61	16	..	130	355
1887.....	223	27	..	..	250	56	64	9	1	124	374
1888.....	200	33	1	..	234	46	78	8	1	133	367
1889.....	....	..	..	..	..	..	....	....	..	....	....
1890.....	....	..	..	..	..	..	....	....	..	....	299

Roman Fever.—Turning now to the important question of "fever," I found fewer differences of opinion among the physicians of Rome than I had anticipated. Indeed, there is a singular unanimity of judgment among local medical men on this point, namely, that the danger from Roman fever has been grossly exaggerated. Serious illness is indeed often invited by the neglect on the part of swarming tourists of ordinary prudence. And for some occult reason every departure from health occurring in visitors of the Eternal City is by them promptly labelled "fever." But while Rome is not in any sense a health-resort, as it was once held to be, I am convinced that the city is not a more dangerous place of residence than Paris, or Berlin, or Vienna, or, for that matter, than New York.

Owing to the importance of this subject and the many misleading statements often found in print, I believe the following views, kindly expressed to me in writing by Dr. Charles, of Rome, will be read with interest by American physicians. It will not be out of place to state here that Dr. T. Edmonston Charles has had a very wide experience, both as a practitioner and lecturer, in India, in France, and of late years in Rome, where he now occupies the official positions of physician to the British Embassy, and of honorary physician to the Queen. In answer to my questions, Dr. Charles writes: "Tradition has it that when he had to write an article to order on the snakes of Iceland, the writer, after boldly commencing by the statement, 'There are no snakes in Iceland,' ran short of ideas on the subject. You ask me what is Roman fever. But here the similarity of our positions ceases, for there yet remains much to be said on the subject, and you can easily understand that your question will require a longer answer than you might at first have imagined. It may seem a paradox to affirm that there is no Roman fever, when all are aware that there is no article of faith more generally held, and certainly none more firmly clung to, than that Roman fever is very fatal, and that it is very common. Everybody knows this, so what is the use of denying it? I confess I think there is very little to be gained by running counter to such a widely diffused delusion. *Populus vult decipi; decipiatur.* As soon would I attempt to persuade a member of the Psychological Society that ghosts do not walk, or an aged Scotch crone that the Banshee exists only in her imagination, as to argue the question of Roman fever with an ordinary tourist. I cannot pretend to be able to give a complete explanation of the origins of a faith which has succeeded in dominating so many minds, but the poverty of the Italian vernacular in regard to illness, seems to have been at the root of a good deal of the misconception.

"The uneducated Italian, when he feels ill, has but one way of expressing himself, '*che febre*,' or '*ho la febre*.' Now, place yourself in the position of receiving the same answer every time you made inquiries about a trivial indisposition of a servant, an artisan, or a mechanic—and this, be it remembered, whether he suffered from a toothache, a cold, a bilious attack, nay, even a fit of idleness—and consider how long it would take you to arrive at the conclusion that you were living in a very feverish country. From this it is but a short step to begin to calculate how long it will be before you yourself are attacked; and on the first symptoms of any trivial illness appearing, to believe that your own time has come, and that you are already in the grip of this all-devouring monster. The staple article of conversation among certain classes of visitors to Rome is about that haunting spectre, the Roman fever. It is a subject that seems inexhaustible, and from its having a terribly personal significance, it possesses a fascination far beyond the glorious pile of St. Peter's, or the classical ruins in the Roman Forum. Such being the case, it not only affords occupation to the thoughts during the waking hours, but intrudes itself into the dreams of the night. Some brains cannot long resist the strain. From fearing to get it, they fear they have it. One of the painful experiences entailed by a practice in Rome consists in meeting with people who, though phy-

sically well, are mentally ill, having worried themselves into believing that they are already the victims of this dread malady. I have seen people (otherwise very intelligent) who, with a common cold, or some very simple ailment, or perhaps only tired with a long journey to Rome, have sent for me on the day after their arrival, and in beseeching tones implored me to tell them if I thought they had Roman fever, as they would not stay a day longer in the place, but would clear out by the evening train. It is lamentable to attempt to estimate the sum of human misery caused by such a widely spread belief.

"No one gains by being an apostle of this false creed, and yet no missionaries are more zealous than its votaries, and no faith is so well supplied with a never-ceasing flow of converts to it. Medical men come by hundreds to Rome. How many of them have seen a case of any kind of fever in Rome, and yet how few of them could say boldly that they did not believe in Roman fever?

"In the sense in which you ask me, I have seen only three fevers in Rome: 1, malarial; 2, typhoid; 3, febris communis continua. You may, if you like, call one or all of these Roman fevers, only if you do so you lodge yourself in the awkward predicament of finding exactly the same fevers in America, in the persons of people who have never been in Rome, or have even never crossed the Atlantic. In the above enumeration I have purposely omitted febricula, as it manifestly has no bearing on your question. Let me say a few words of explanation about each of these three fevers, as from what you say I gather that American physicians would like some positive information regarding them.

"1. **Malarial Fever.**—Though I am here from the middle of October to the end of June, I have never seen a case of malarial fever caught in Europe, in any American or Englishman. I doubt very much whether they could have caught a malarial fever in Rome even in the months in which I am not here. But of this I am certain, that no one has consulted me with either a quotidian, tertian, quartan, or any other form of malarial fever contracted in Rome, or, as I said before, in Italy. In Americans I have only seen minor manifestations of the malarial poison, and in every case the sufferers have assured me that they were only too familiar with their symptoms from their American experience. Circumstances bring my way numbers of aristocratic and moneyed classes of Englishmen. It is among these classes that sportsmen are to be found, and hence all the malarial fevers I have seen in Rome have been contracted in shooting excursions in India, Southern Africa, Algeria, or elsewhere. Since Laveran wrote and Marchiafava labored, and Osler, of the Johns Hopkins University, taught, the word malaria has come to occupy a very subordinate place in the causation of fever in Rome. Even now, however, the word is much too loosely used. It is far too convenient a cloak for our ignorance to be lightly laid aside, too easy a subterfuge to be easily taken from us. Patients do not like being told that we do not know what trifling indiscretion has made them feel ill, but they do like having it laid down that malaria is at the root of their trouble. Such being the case, it is too much to expect of human nature—just yet—that a medical man will allow himself to be badgered about a case when he can see so easy a way out of his difficulty. Or, to take a higher view of the position, there are many medical men who for a lifetime have been persuading their patients that they had some malarial element in their case, and they have made the statement so often that they believe it implicitly themselves, and cannot be got to understand that they may be wrong, and that an error, however often repeated, can never come to be the truth. Even here, however, perhaps it would be well if they realized that their position is rendered distinctly untenable by the fact that they have never sent a specimen of malarial blood to a pathological laboratory to have the correctness of their diagnosis disproved, and have never moved a finger to try and confirm their diagnosis by an appeal to their own microscopes.

"There are many thoughtful and highly educated medical men in Rome who live on the traditions of the past, and from having seen a little, and heard much, of malarial fever in Rome, would be staggered if it were pointed out to them that for the last ten years they have not seen a single case of quotidian, tertian, or quartan fever. Nor is the explanation of this hard to seek. The Rome in which they gathered up their experience of malaria is not the Rome of to-day. In the city of twenty years ago large districts were unbuilt over and were consequently undrained, and formed choice habitats for the malarial poison to be generated. Since Italy chose it for its capital, all this has been changed. Any low swamp, garden, or vineyard has become a valuable possession as a building-site. Long lines of well paved and carefully drained streets cover the picturesque haunts where malaria so long lingered; and it would be difficult for an investigator to obtain a list of possible places where he might reasonably search for malaria inside the city walls. The uninhabited slopes of the Janiculum hill is the only place I know of where I would not like to sleep at night in the malarial months of August and September. This, though technically in the city from being within the walls, is far removed from the Rome inhabited by visitors, and lies on the other side of the Tiber. Malaria requires for its development intense sun heat and a certain amount of moisture. Ground built over by barracks and palaces, with all its surface moisture and subsoil water drawn off into a fine net work of well-laid drains, no longer fulfils the conditions required for producing malaria. A well-cultivated patch of garden in a few years is equally free from danger. This is why a student of malaria is now driven outside the walls of the Italian capital if he wishes to make researches on this subject.

"2. **Typhoid Fever.**—We have typhoid fever at Rome as you have it elsewhere, only not so much of it. We have nearly as good a record as they have in London, and the death-rate from this disease is consequently a far more favorable one than can be shown in Berlin, Vienna, and Paris. In fact, this exemption from typhoid has always seemed to me very remarkable. I believe it can be traced to two circumstances: to an abundant and excellent water-supply, and to well-flushed and consequently well-emptied sewers. Some of our hotels are fairly well disconnected from the sewers, and in other respects have had a good deal of money expended in their sanitary plumbing; but I am unable to attribute much influence to this, as the immunity from typhoid extends to the general population, who are as badly off in this respect as they can well be. The late Dr. Aitken, whom I succeeded in practice, told me he had seldom seen a case of typhoid contracted in Rome. I can add my testimony to his, and as our united experience covers about a quarter of a century, it is not without its value. When anyone asks me about their danger of contracting typhoid during their residence here, I have but one answer for them. 'I cannot pronounce you safe till you have been fourteen days here, but as soon as this period of probation is over, your danger of contracting this disease during all the rest of your stay in Rome is infinitesimal, so you may stay here for ten years if you like.' The reason for my excluding the preliminary two weeks is a simple one. The incubation period for typhoid being of this duration, anyone having imbibed the poison, even on the day before his arrival, may develop it in Rome from having brought it with him. This, perhaps, is the place to say a few words regarding these cases of imported typhoid. Up till quite recently they formed a very considerable part of an English medical man's work in Rome. In fact his year's income depended very much on the number of such cases that came into his hands. Cases came from elsewhere also, but a constant stream flowed from Naples. After the late terrible experiences from cholera in that city, their disgraceful water-supply was changed. Now their

drinking-water is abundant and pure, and their typhoid death-rate has gone down. During all the years I have been in practice in Rome I have not seen a single case of typhoid brought from any of the hotels of Naples situated high up above the sea. After this digression about typhoid cases imported into Rome, I now return to those cases for which we are ourselves responsible. In my own practice, as distinct from cases I have seen in consultation with my *confrères*, I have not yet met with a single case among the travelling public, in any American or Englishman, which was contracted in Rome. Among the residents I have attended one French servant and one English servant in whom the disease was distinctly due to local influences. In the practice of my friends I have only been able to recall two, or perhaps three, cases that have contracted the disease here. I have before me the records of all the burials of American Protestants in the cemetery in Rome from June 1, 1881, to May 31, 1891 — that is, for a complete ten-year period. In it I find only five deaths that can with an approach to certainty be traced to typhoid. That is an average of one death in two years. Besides this, there have been other two deaths from fever, one returned as febris subcontinua, the other as perniciosa. It is open to anyone to regard those as possible deaths from typhoid, but I prefer to class them as deaths from the next fever that I shall presently have to refer to. Even, however, throwing them into the typhoid account, they do not raise the average risk that an American has run during the last ten years of dying from typhoid in Rome to any very alarming figure, and, when contrasted with the popular beliefs on this point, ought to tranquillize the medical mind, and through it to allay the apprehensions of the lay members of the multitudes that flock every winter to Rome.

"**Febris Communis Continua.**—Simple continued fever, though appearing in the nosologies of English, Americans, French, Germans, and Italians, has not yet attracted the attention that it deserves. Its natural history has still to be written, and yet it is a most important disease. Murchison in his great classical work alludes to it. All are agreed that it is independent of any specific poison. The primary part affected seems to be the nervous system. Murchison says 'the best illustration is to be found in the fever that occasionally results from sheer nervous exhaustion consequent on mental or bodily fatigue.' He also traces cases to exposure to the sun, and surfeit. Many of the cases that I have seen have been evidently traceable to entering a cold building when the body was overheated.

"Early in my career in Rome I came to speak of it as chill fever. It is very difficult to get a patient who is seriously ill to understand the position when he hears you talk of simple fever or common continued fever. As often as not they tell you they never heard of chill fever, but, having experienced the chill and being convinced they have fever, they accept the designation as something intelligible. As a rule, however, my cases have borne out Murchison's dictum as regards nervous exhaustion. Many of them have been fagged out with days of excessive sight seeing before getting heated in the sun, and then entering a cold church or museum. Again, a long day's picnic in the country—say at Tivoli or Frascati—miles of walking, far beyond their powers, and hanging about for hours, seeing classical ruins, with nothing but a biscuit or other imperfect refreshment; then—always when tired out and heated—a wait as the sun went down in a draughty station, a keen north wind, and no extra clothing to protect themselves, an hour or two in a cheerless, draughty, railway train, and you have another sure prescription to get an attack of the fever we are considering. To see this fever in its full force, go to any country with a great daily range of temperature. A hot sun during the day and a cold wind at night. The Malta fever is one prominent example of it; the Bengal remittent, as seen in Calcutta during the cold-weather season, is another. But instances of this fever may by met with everywhere—in New York, London, Berlin, and Paris. In Rome it has disturbed us much in our diagnosis. On the one hand it may make us think we may have a malarial remittent to deal with, and on the other may make us believe that we are treating a typhoid. If we have a succession of cases, however, that we look on as malarial, we very soon persuade ourselves that quinine is of no use in malaria, as this fever goes on in spite of the largest doses of quinine. In the early stages, though it may depress the temperature a little, it does not bring the fever to an end. When, however, the fever is near its end, and the temperature is very little over normal, a little quinine comes to have its place.

"If you label these cases typhoid you come to have no belief in the diarrhœa-specific eruption, or classical range of temperature connected with typhoid, and if, in addition, you, like the German, begin your treatment with a dose of calomel, or, like the French, with an emetic, you soon convince yourself that you have discovered the secret of cutting short your typhoids, as you see many cases ending before three weeks, and not a few between ten days and a fortnight. Abortive typhoids become the rule, a rich experience in such cases is soon gained, if you only diagnose cases of common continued fever as typhoid. This fever can hardly be traced in the death-rate. It is registered either as a malarial remittent or as a typhoid, according to the view taken of it by the medical attendant. In referring to the typhoid mortality among Americans I had occasion to allude to two cases which from the way they appeared in the registers you might choose to regard in the light of typhoids. I may also now say that one or more of the deaths registered under the head of typhoid may possibly have been due to the fever I am now writing about. From the point of view of 'Roman fever,' it does not much matter of what fever the person is believed to have died. It is important, however, that the true fever-rate is known. And on this point there can only be one doubt. No one can be very sure that the case registered as perniciosa was a fever at all. It possibly was a sudden death from apoplexy or heart disease. The mistake, however, if there is one, is on the side of overstating the fever mortality. I believe no cases of fever have been registered under any other head. These seven cases of fever form the most important group of deaths. Then follow four deaths under the heading of morbus cordis, and three under the heading of pneumonia. These account for four and three deaths respectively. The cause of one death is not recorded, and eight deaths are due to cancer, diabetes, anæmia, gangrene of the mouth, peritonitis, laryngitis, consumption, and meningitis. These twenty-three deaths are all that have taken place among the American Protestants living in Rome during the ten years I have referred to. The deaths among the Roman Catholic Americans cannot be procured.

"As the great majority of travelling Americans are Protestants, these figures may be relied on as giving a very correct idea of what the Americans who have died in Rome owe their deaths to. This record speaks for itself. That only twenty-three Protestant Americans have been buried in the cemetery in Rome during ten years, must be a revelation to most people. During this time the number of Protestant Americans who have visited Rome has been very large—how large no one can say with any approach to certainty. I will not allow myself to hazard any attempt at an exact statement of numbers, but I will say, without fear of contradiction, that if you want to represent in figures such a multitude, you cannot do so in either hundreds or thousands, but will have to number them by the hundred thousand.

"I have previously made the statement that malarial fevers do not kill Americans in Rome, also that deaths from typhoid have been much reduced in frequency. Building, drainage, water-supply, have conduced to this happy result. The growth of the city, accident, and design have led to this being done for the travelling public.

In other words, the community has diminished the death-rate from these two of the fevers alluded to. As far as my knowledge goes, they cannot do anything to lessen the dangers of the third fever. But what the community cannot do, the individual can. If everyone who comes to Rome is impressed with the idea that it is more or less his own fault if he gets attacked with chill fever, doubtless the frequency of such attacks will be much lessened. To be forewarned is to be forearmed. So let everyone avoid depressing his nervous system by cruel over-fatigue, and let him be careful never to enter a cold edifice when overheated. Cab fares in Europe are very cheap. For less than a quarter dollar two persons can drive from one end of the city to the other. The physical exertion of standing about sight-seeing for hours is quite enough of strain on the nervous system without the needless exertion of walking for miles to reach the point you wish to arrive at. When entering a cold place, put on an extra top-coat or cloak or shawl, a jacket, or what not. When sight-seeing, also make a point of securing a good mid day meal. With these precautions you are safe. Those who cannot afford a cab fare, or who will disregard the other necessary precautions, will best consult their true interests by remaining safely at home."

To this description of "fever at Rome," by Dr. Charles, I have nothing to add, except to repeat that natives do die of malaria in and around the Italian capital, even if foreigners are not apt to suffer in the same way.

It would be easy, of course, to give some account of the preliminary organization, now well under way, of the International Medical Congress, also to speak of medical instruction at the University of Rome, of the great hospitals of the city, of recent medical legislation, of the peculiarities of practice, the income of professional men, and many other matters likely to interest physicians. But, as already intimated, my object was not to write exhaustively, but rather to present certain points touching what I conceived to be essentials, in a succinct yet accurate manner. I trust that, with the co-operation of Dr. Charles, this may have been accomplished.

THE SENSORY-MOTOR FUNCTIONS OF THE BRAIN.

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THERE seem to be nationalities in science as well as in statecraft. In a general way it may be said that the English-speaking physiologists regard the sensory and motor areas of the brain as separate and distinct, and that they look upon them as the centres for the direct reception and emission of sensory and motor impulses. The Germans favor the view that these areas are the centres for the direct reception and emission of nervous impulses, but they hold that they coincide or are more or less intermingled. The French and Italian investigators study the question more from the psychological standpoint, and place less stress upon the separation or commingling of the sensori-motor areas than they do upon the doctrine that the cortex is a general centre for the representation of motor and sensory images. Psychosis, according to them, is a sensori-motor phenomenon, and mentalization the result of the combined activities of the cortical sensory and motor areas. The direct sensori-motor elements are lower down than the cortex. Impulses of cerebral origin are as much peripheral as those starting from the skin. Voluntary action is as much a reflex as an ordinary involuntary spinal reflex. This is a mere outline statement of the three theories now in vogue in regard to the sensori-motor areas of the basin. For the doctrines of the Italian school I must acknowledge my indebtedness to the work of M. Jules Soury, "Les Fonctions du Cerveau," whose account I have made ample use of. The teachings of the English and German physiologists are more familiar than those of the Italians to the average American reader. The views which I will venture to advance in the latter part of this essay tend somewhat, though not entirely, toward the Italian doctrines.

It is much to be regretted that patients presenting symptoms of a lesion in the motor zone of the cortex are not more frequently and minutely examined with regard to general sensation. In many of the reported cases of paralysis there is no mention whatever of sensation; and in others, where the attempt has been made to discover the sensibility of the skin, the methods adopted have been so crude and unscientific, and the results obtained so meagre and indefinite, that the report, in this respect at least, is almost valueless. In comparison with the motor tests for the localization of a cortical lesion, sensory tests will probably always remain less popular. The variation of the personal equation alone is enough to shake one's reliance on sensory symptoms, and to properly perform these tests necessitates an unusual amount of patience, shrewdness, and insight into human nature. The instruments of precision must be employed in every conceivable manner, and frequently at most unexpected moments. Unlike the testing for paralysis, we are here dependent almost absolutely upon the patient and his subjective feelings; hence we must study closely the patient's peculiar temperament and make due allowances for his intellectual status. His entire physical condition must at the same time be taken into consideration, for if there be paresis, for instance, a sensory response may be very greatly modified by the inability of the muscles to act and manifest the appropriate motor response. Notwithstanding all these difficulties it is extremely desirable that every case of paralysis be carefully and accurately tested for general sensation. The experiments of the laboratory favor the view that the sensory areas of the cortex are separate and distinct from the motor, while clinico-pathological data intimate that they are identical, or at least partly coincident. Which is the true condition can only be settled by the most rigid physiological and pathological observation.

In regard to the centres for cutaneous sensations—touch, pain, temperature, and the sensation commonly known as the "muscular sense"—many theories have been advanced. The general consensus of opinion holds that the optic thalamus is the basal ganglion for the reception of sensory impulses from the outer world. Luys, Ferrier, von Monakow, Fournier, and Crichton-Brown so teach; though Flourens, Longet, Tamburini, and Schiff attribute motor functions to this ganglion. Above the thalamus the fibres radiate through the corona and terminate chiefly in the cortex of the parietal and temporo-sphenoidal lobes. Below the thalamus the sensory are clearly distinguishable from the motor paths. Do these so unite or intermingle above this ganglion as to terminate in the same cortical area, or do they still remain apart, one set (motor) going to the central lobes, the other set (sensory) turning back to end in the postero-parietal lobes?

In his earlier experiments Ferrier found that injury to the hippocampal convolution and cornu ammonis produced loss of tactile sensibility on the opposite side of the body. He therefore located the centre for tactile sensibility in the region of the hippocampus. This was confirmed by Yeo in his experiments on monkeys in 1884. Horsley and Schäfer have extended the views of Ferrier, and as a result of their investigations concluded that the whole of the limbic lobe (including the callosal and hippocampal regions) presided over the sensations of touch and pain, if not exclusively, at least to a very large extent. In some of their experiments the loss of sensation was accompanied by motor phenomena, which they attributed to unintentional injury of the motor area during the performance of the operation. As opposed to Munk and Schiff, who would possibly argue from this the identity, in part at least, of the motor and sensory areas, they state that in some of their experiments there was paresis

of the lower limbs with anæsthesia of the upper limbs, and in others anæsthesia without paralysis.

There seems to be some very intimate connection between the limbic lobe and central lobules, for when we remember how frequently sensory auræ and other paræsthesiæ precede and accompany Jacksonian symptoms caused by a limited lesion of the motor cortex, we must admit, if not the identity, at least the extreme intimacy of the motor and sensory areas. Many of these focal lesions do not extend deep enough to involve the radiating fibres from the sensory areas, and their mutual influence must, therefore, be entirely cellular and transmitted from one to the other by associating fibres.

This influence may be of an inhibitory nature, for clinically the anæsthesia accompanying such forms of local paralysis is never complete, but is rather of the inhibitory type Brown-Séquard has given special attention to the extensive inhibitory functions of the nervous system, and in the light of his investigations such an explanation is not unwarrantable. If the sensory and motor areas were identical, it is hard to comprehend how a limited focal lesion could give rise to complete paralysis and incomplete anæsthesia in related parts of the body. Both sets of cortical cells would, presumably, be similarly injured, and the anæsthesia would be more or less proportionate to the amount of paralysis. Ferrier's objection to the experiments of Munk and his followers, in this connection, seems to me to be a weak one when he states that in animals the loss of sensation is only apparent and not real, because the paralyzed animal is unable to express any sensation. This may do for animals, but in man there is an abundance of clinical observation which goes to show that there is frequent loss of sensation with Jacksonian symptoms.

The sensorial area is thus made to include the gyrus fornicatus, hippocampal convolution, procuneus, and portions of the parietal convolutions. In a general way it may be stated as the postero-parietal parts of the hemispheres. This arrangement seems to be established by pathological observations in man, as well as by experimental investigations upon the lower animals. It must not be forgotten, however, that Ferrier's observations were made mostly upon the lower animals, and that the focal epilepsies, which finally terminate in general convulsions, reveal a higher and more intricate structure of the human brain.

Those who maintain that the histological structure of the central convolutions affords a clue to their proper functions reason beyond the facts. Thus Gowers says "it is instructive to note that in this part are found the largest ganglion cells met with in the cortex, cells comparable to, though exceeding in size, the certainly motor-cells of the anterior cornu of the spinal cord." Nevertheless we find in the histological structure of the hippocampal convolution, which is admittedly sensory in function, pyramidal cells very similar to those of the motor areas. They lie just beyond what is known as the stratum radiatum. Furthermore, these large cells have never yet been proved to be strictly motor. They may be muscular, meaning by that term that they are in immediate connection with the muscular apparatus, and are therefore capable of a grosser or more vigorous form of activity than the delicate receptive sensory cells. But when we remember that sensation itself is but a mode of motion we can understand that these giant-cells may differ from the smaller ones not so much in kind as in degree. The reflex character of most of the sensori-motor phenomena would seem to indicate that both sets of cells possessed the faculty of receiving and emitting nervous impulses and it is hard to escape the conclusion that the real differences in their functions are dependent more upon the nature of the terminal end-organs, with which they are connected, than upon their own particular structure. Physicists believe that all phenomena are but the expression of a form of motion. Light, heat, electricity, are but different modes of molecular motion. Nervous activity has often been likened to electricity; but whether the comparison be true or not, it is more than probable that the former is as much a mode of motion as the latter. Both sensory and motor phenomena are alike the result of molecular movements. The muscular contractions are doubtless the direct expression of the molecular changes within the muscular tissues and the reflex circle, beginning in a peripheral irritation, running through the centre from sensory to motor cells, and finally passing out again to terminate in gross muscular contractions, is simply the transmission of the same molecular disturbance, differing in degree, but not in kind, in the various parts of the arc. In a rough way it may be compared to a taut string which experiences throughout its entire curve a gentle vibration started at either extremity.

The most positive knowledge we possess in regard to the functions of the cortex is that the central convolutions somehow preside over the movements of the body. And yet, as Gowers says, "we need not conceive that these parts subserve no other function (we shall presently see reason for believing that they have sensory as well as motor functions)." Injury to these convolutions produces spasm or paralysis, and, so far as we know, these symptoms are not produced by cortical lesions outside of these convolutions and their immediate neighborhood. That these are not the only centres that preside over voluntary motion is to be inferred from many experiments upon animals. A rabbit whose entire cerebrum has been removed can still run; and, according to Goltz,[1] there was no complete paralysis, but only a slight anæsthesia, observed in a dog whose whole brain except one occipito-parietal lobe was excised.

It is an old-established fact that removal of the cerebral hemispheres, olfactory ganglia, optic lobes, corpora striata, and optic thalami does not result in the loss of voluntary motion and general sensibility. There is loss of intelligence, of inhibitory rationality; but the animal still executes purposive movements which are quite different from the simple reflex acts depending upon the spinal cord. Hence the question arises, What is the nature of these disturbances of voluntary motion caused by destruction of the cortical motor areas? A dog deprived of his two sigmoid gyri does not manifest motor paralysis, if by that term is meant absolute loss of motility. There is not a single physiologist who maintains such a thesis; hence the ground for the criticisms of Goltz, the distinguished opponent of the localization theories. The cortical motor areas must therefore preside in some special way over the muscular apparatus, and not directly, as at first seemed to be the case. In 1876 Hitzig spoke of the effects of cortical lesions in the motor area as "the expression of an abnormal representative action;" in other words, as the result of a destruction of the motor images belonging to certain voluntary movements. The muscles of the animal are not paralyzed, but the animal no longer possesses any mental images or ideal representations of the movements it should make or desires to make. The condition is probably somewhat like that of the nightmare, in which the sufferer is more or less conscious of his surroundings and is full of a desire to move, but is incapable of action, or acts only automatically.

Nothnagel and Bastian favor the theory of Hitzig, but they differ in locating a centre for the "muscular sense" outside of the central lobules. The former declared to the Sixth Congress for Internal Medicine, held at Wiesbaden, that he had never known focal lesions of the motor zone to produce loss of muscular sense, but that such lesions were often accompanied by a loss of tactile sensibility. He places the sensory area in the parietal lobes, where he also locates, together with Seguin, the special centre for the muscular sense—a sense which Mills sees no reason for separating from that of general sensation. Nothnagel further states that the parietal lobes bear the

[1] Arch. für die gesammte Physiologie, Bd. 42.

same relation to the central and paracentral lobules that the convolution of Broca bears to the cortical hypoglossal motor centre. Injury to the parietal centres may produce ataxia without true paralysis, and injury to the central areas may produce paralysis without the loss of the muscular sense. This is somewhat of a return to the limitation views of Ferrier, and, in fact, both Nothnagel and Charcot separate the motor areas from the centres of cutaneous and muscular sensibility. For Charcot, however, the cortical motor centres are the seat of motor representations or conceptions, which must necessarily precede the accomplishment of any voluntary movement, while the muscular sense, or kinesthesic sensibility of Bastian, is subserved by the cortical centres of sensation.

According to Schiff, the so-called motor areas are entirely sensory, their activity is largely of the nature of a reflex, and the paralysis due to their injury is really the result of the loss of tactile sensibility. Munk does not believe that these centres determine movements directly, or in any reflex manner, but merely by the awakening of the mental images or representations of both general sensibility and motility. These ideational centres are not in immediate connection with the individual muscles, nor do they exert their influence directly for their individual actions. As Dr. Theodore W. Fisher[1] has tersely put it, "the will can only control and the mind is only conscious of movement in the mass." The fact that stimulation of certain areas of the cortex produces movement of groups of muscles and the co-ordinated movements of the segments of the limbs, shows that movements and not muscles are represented in the cortex. Many of the opponents of Ferrier's views have lost sight of this fact because this investigator insisted so strenuously upon the anatomical distinction and separation of the sensory and motor areas, and upon the sharp limitation of the latter to the central lobes. Munk's theory is popular in Germany, and makes the so-called motor areas entirely sensory. The activity of these centres results in "conceptions of movements," rather than the movements themselves. They are the psychical origin of the impulses which farther down the tract (possibly in the basal ganglia or anterior cornua of the cord) are transformed into the true motor stimuli that set the muscles into action. The cortical motor area is named by Munk, therefore, the "Sense-sphere" (Fuhlsphäre). Gowers' objection to this theory is that the "sense of innervation," an element of the threefold "conception of movement," is a sense of something which is not itself sensory, and which is commonly termed motor, and that destruction of this region causes loss of this "motor" function out of all proportion to any demonstrable sensory loss. The first of these objections seems weak to me; for it is a fact, as Stricker and others have demonstrated, that movements are preceded by psychical representations, which representations must obviously be of a sensory character. Franck inclines to the theory of a reflex action in the motor areas. He believes that the motor, like the sensory zones, are only the points of departure for voluntary motor impulses, while the true motor apparatus, or executive centres, are to be found in the cellular elements of the medulla and spinal cord. All of the cortical areas, according to this author, are merely centres of voluntary association. We know that the sensory and motor elements of the cortex are united by associating fibres, just as they must undoubtedly be lower down in the cord to complete the reflex arcs. The reflex phenomenon, both spinal and cerebral, necessarily presupposes such a union of the sensory and motor elements. This, it seems to me, can explain most plausibly the occasional association of the two sets of symptoms when the lesion happens to be limited to one or the other area. Such an assumption is not unwarrantable upon any anatomical or physiological basis, and it harmonizes most completely with the results of experimental and clinico-pathological observation—certainly more so than does the assumption that the motor and sensory areas coincide or consist of the same cellular elements.

Formerly all reflex functions were supposed to belong exclusively to the spinal cord, but to-day we consider the cerebral centres as much reflex as the spinal. Many of the Jacksonian epilepsies are undoubtedly of simple reflex origin. Mills[1] reported in 1880 a case, clearly Jacksonian in type, that had had seizures for eleven years, caused by a fibroma in the hand. When the tumor was removed the epileptic seizures eventually disappeared. "In the normal brain," Mills writes, "no reflex actions can be performed without exciting to action secondary volitional movements which no longer require the stimulating influence of a reflex action." The absence of gross cortical lesions in some forms of Jacksonian epilepsy, and Heidenhain's experiments in hypnotism, with other observations and facts, all prove conclusively the reflex function of the cortical centres of the brain.

Franck speaks of them as psycho-motor centres, because they control by their psychical influence the true motor apparatus. He says that "in examining the movements produced by the excitation of points under the control of the cerebral cortex, they may be regarded as analogous to reflex movements; but the essential difference between the movements so started and the ordinary reflexes consists in the point of departure of the original impulse. In one case it is cerebral, in the other cutaneous, but in every case it is peripheral in relation to the centre of motion (medullary centres)." Strictly speaking, then, the pyramidal tracts transmit *afferent*, and not *efferent*, impulses to the motor cells of the cord and medulla. Marique adopts somewhat this reflex theory for the motor centres; for he found that simple separation of the motor from the sensory areas, as a result of cutting the associating fibres, produced the same form of paralysis as when the cortical motor areas themselves were removed. He concludes, therefore, that the motor areas cannot act of themselves, but that, functionally, they are dependent upon impulses transmitted from the sensory areas of the parieto-occipital region. This question is far from being settled, however, since such varying results have been obtained in the experiments of Franck and Pitres, Marique, Vareth, Exner, and Paneth.

According to M. Soury, Lisso has collected, since 1882, some eighty eight cases in which disturbance of sensation accompanied cortical lesions of the motor area. Hence Tripier and Gilbert Ballet have named the cortical area the "sensitive-motor zone." Exner admits that the different areas for tactile sensibility of the various parts of the body are intermingled with the motor areas. In his study of aphasia[2] Dejerine says: "These disturbances of cutaneous sensibility accompany the beginning of the paralysis itself in the majority of cases, sometimes they even precede the latter. These phenomena are not rare in the course of a hemiplegia of cortical origin, and they deserve close study." The lesion in the case of Dejerine was limited exclusively to the motor cortex, leaving the sensory paths intact. Dupuy notes that Horsley reported to the Congress of Brighton, in 1886, that the removal of a part of the motor cortex in three patients, for epileptiform seizures symptomatic of cortical lesions, resulted in the partial or complete loss of sensibility. Seguin[3] and Weir reported the case of a man, aged thirty nine, who complained in the autumn of 1882 of severe head pain and convulsive attacks, limited to the right side of the neck and face. From 1885 these attacks occurred very frequently and were associated with a sensation of cold. The spasms involved the right arm and hand as well as the face. Finally paresis supervened in these parts, and was accompanied by aphasia and agraphia. The diagnosis was tumor in the facial centre of the left motor zone. Operation proved it to be a sarcoma, about an inch in thickness, nesting beneath the foot of the second frontal

[1] Cerebral Localization, American Journal of Insanity, October, 1889.

[1] Philadelphia Medical Times, December 18, 1880.
[2] Revue de Med., 1885. [3] Soc. de Biol., October 30, 1886.

and the anterior border of the ascending frontal convolutions. A report of the case in the *Journal of Mental and Nervous Disease*, of December, 1888, one year after the operation, states that there was unquestionably anæsthesia of the cheek, hand, and forearm to contact tests as well as with the æsthesiometer. There was also anæsthesia of the lower part of the face, lips, and inside of the cheek. From the study of the sensory tracts and of a series of American cases of cortical lesions, Starr [1] concluded that the motor and sensory areas coincided, though the former extended beyond the latter, and included the postero-parietal lobe as well as the Rolandic region. Four of the cases in Starr's list belonged to Mills, and in reviewing his notes the latter came to the conclusion that they at least did not support the inference drawn by Starr. From a careful review of one hundred and thirty-seven cases, Dana [2] decided that the sensory (tactile sensation) and motor areas were coextensive. In the discussion of Dana's paper Starr and Seguin argued with the author, but Mills favored the doctrine of Ferrier, namely, that the centre for tactile impressions was to be found in the gyrus fornicatus, and gyrus hippocampi. Stricker maintains that motion and sensation are so intimately related as to be almost identical. His views can be most clearly portrayed by an illustration. When one represents to himself, for instance, the movements of a cloud, the muscles of the eyes undergo the same sort of a sensation as though they were actually gazing at a moving cloud. By checking this muscular sensation within the eyes, the mental image of the cloud immediately ceases its movement. The cloud seems absolutely stationary.

Among the Italians Lussana and Lemoigne maintain that there are sensory and motor areas in the cerebral hemispheres, but that they do not act upon one another in the manner of a simple reflex. Tamburini, Luciani, and Seppilli have elaborated, since 1876, the theory that the "motor zone" consists, on the one hand, of the centres for cutaneous and muscular sensibility, and on the other, of the centres for motor ideations. This, as will be recognized, is a very elaborate, mixed, and comprehensive theory. It well illustrates, says M. Soury, the eclectic tendencies of the Italian school. As a general rule the Italians are as much opposed to the views of Hitzig and Nothnagel as they are to those of Schiff and Goltz. They incline somewhat to the theories of Ferrier and his English followers. In other words, they believe that the paralysis caused by injury of the cortical motor areas, pathological or experimental, is neither ataxic nor reflex. It is distinctly and entirely a paralysis in the truest sense of the word. Such at least is the opinion of Albertoni and Michieli, Lussana and Lemoigne, Tamburini, Luciani, Seppilli, Maragliano, Bianchi, Palmerini, Tonnini, and others. In the words of Maragliano, all motor phenomena should be regarded "as dependent upon true voluntary motor centres, which are capable, without the intermediation of any other motor centres, of starting into activity the muscular apparatus of the body." Equally clear in their statements are Luciani and Tamburini. These authors, unlike Ferrier, localize even the centres of voluntary motion in the basal ganglia, particularly in the corpora striata. Injury to these ganglia, as well as to the corresponding centres of the cortex, does not result in ataxia or the phenomena of inco-ordination; nor is any alteration of general sensation, including the sense of touch, to be detected in animals whose motor zones have been operated upon. The striate body, it will be remembered, is, according to Ferrier, the centre for movements which once were voluntary, but which afterward have become automatic. Thus a dog can still run and swim if the striate body remains intact, though the corresponding cortical areas have been removed. Luciani and Tamburini endow the basal ganglia with the same psychic functions as the cortical areas, and thus differ considerably from Ferrier. They speak of them as psycho-motor centres, probably meaning thereby that the basal ganglia, as well as the cortical motor centres, are in direct connection with the sensory centres. "The basal ganglia," they say, "and especially the corpora striata, possess the same physiological value as the centres of voluntary motion, or, in other words, these centres can be put into action directly by psycho-sensitive sensorial processes." When the authors promulgated these ideas, it was supposed that the function of the striate bodies was motor; now, however, it is known that the hemiplegias due to hemorrhage in this region are the result of the injury done to the internal capsule. In fact the striate bodies have been completely transformed into cysts, and yet there was no paralysis so long as the internal capsule continued intact. Hence these earlier views of Luciani and Tamburini are now quite untenable; nevertheless it must be admitted that the recent study of the striate bodies (caudate nuclei) by Baginsky and Lehmann seems to reveal some truth in the earlier views of these Italian authors.

The so-called paralysis, resulting from a destructive lesion of the excitable zone of the cerebral cortex is believed by some of the Italian writers to be due entirely to the loss of sensation. Silvio Venturi,[1] of Padua, adopted this ataxic theory in 1878. It was Schiff, the distinguished predecessor of Luciani in the chair of physiology at Florence, who became the chief exponent of this sensory explanation of the paralysis. In 1871, the year after the experiments of Fritsch and Hitzig, the editor of *l'Imparziale Medico*, inspired by Schiff, wrote that all the immediate effects of injury to the so-called motor centres of Hitzig were really the result of a disturbance of sensibility and were limited entirely to that sphere. In several Florentine publications, issued in 1873 and 1876, Schiff recalls these facts. According to this physiologist, a dog with a cerebral lesion is not affected with any loss of energy in the muscles of the opposite half of the body, but merely with an absence of the feeling of surety and power of adjustment in its various movements because of the loss of tactile sensibility. The general movements of running and leaping are all well performed, but there are marked evidences of an uncertainty in regard to the position of the limbs. This anæsthesia is entirely cutaneous, according to Schiff, while the sensibility to pain and pressure remains undisturbed. Alternations of the sense of pressure and temperature are caused by the increased depth of the cerebral mutilations. While these views, together with the experiments of Schiff, are not accepted by the majority of physiologists, they have very greatly modified the original theories of many of them in regard to the motor character of the so-called motor areas. Hitzig himself, who was so vigorous a supporter of the purely motor theory, has altered his conceptions to such an extent as to refer to these motor phenomena under the name of disorders of the muscular conscience. Schiff's theory is that of a pure reflex. An impulse from the periphery, for instance, is sent inward to the brain, and there, within some hitherto undiscovered subcortical centres, is transmuted into an efferent impulse, which is sent out again to the muscular apparatus. This cerebral reflex, he insists, is similar to the spinal reflex, and the phenomena due to its disturbance are similar to the reflex phenomena due to injury of the posterior columns of the cord. It should be noted that Schiff locates the reflex centres not in the cortex itself, but somewhere beneath the cortex. There have been many objections and objectors to these views of Schiff, and his followers form quite a small minority. But it must be admitted that, like his opponent Hitzig, he has done valuable service to the science of cerebral localization, for if Hitzig discovered the results of injury to the motor areas of the cortex, Schiff revealed those due to injury of the centres for tactile sensation. To judge from the doctrines of Munk, Luciani, and Seppilli, the

[1] Journal of Nervous and Mental Disease, New York, July, 1884.
[2] Ibid., October, 1885.

[1] Arch. Ital. per le mal. nerv. 1878.

future will have to acknowledge Schiff, as well as Hitzig, as one of its forerunners. When Schiff asserts that "one thing is positive, there are no cortical centres,"[1] we are somehow forcibly reminded of Goltz. Though Schiff can enumerate many objectors, chiefly among the followers of Ferrier, such as Lussana, Tamburini, Bechterew, and Horsley, his teachings, like those of Goltz, have acted as a wholesome check upon the too rapid assumption that all movements of the body originate from certain limited areas of the cerebral cortex. They have induced experimenters to study somewhat more minutely the character of all muscular movements, the relation of the centres for these movements to the centres for sensation, and the influence, if there be any, of the higher mental faculties, the purely psychic functions of the brain. The extremely difficult and complicated nature of the problems involved taxes the keenest powers of the psychologist as well as of the physiologist.

Tamburini has attempted a reconciliation of the two opposing views just noted. He admits it is probable that the points of the cortex where the inpouring sensory impulses are transformed into outgoing motor impulses correspond identically with the cortical areas upon which so much study has been expended. In his own words, "each of these centres may be at the same time the focus for the reception and perception of the sensory excitations sent inward from a given part of the body, and the point of departure for the voluntary centrifugal impulse going to the muscles of the same part." This, he believes, explains the absence of sensibility in the direct production of localized movements; for in the one instance the electric current takes the place of the nervous current or impulse, and in the other the removal of the cortical centres must necessarily abolish the perception of the peripheral impressions. In conjunction with Luciani, Tamburini has extended this same theory, in regard to the excito-motor zone of the cortex, to the centres for sight and hearing. The movements of the ear and eyeball, initiated by a sensory impression at the periphery, are not of the nature of a pure reflex, as Ferrier believes, but simply the result of the intermingling of the corresponding sensory and motor cells of the cortex. In other words, corresponding sensory and motor cells lie in close juxtaposition within the various cortical areas. These views of Tamburini seem to be supported by an anatomical as well as physiological basis; for, as I have already pointed out, the region of the hippocampus major, which Ferrier and his followers assert is sensory in function, contains a row of large pyramidal cells between the medullary centre and the so-called stratum radiatum; and these cells are identical, so far as their microscopical appearances are concerned, with the supposed motor cells of the central convolutions and of the anterior horns of the cord.

In 1880 Luciani, who, like Seppilli, found that the effects of a circumscribed lesion within the motor areas of the cortex were not only paralysis or paresis, but also an alteration of the muscular and cutaneous sensibility more or less pronounced, wrote that "the motor centres and the sensory centres, which together perform a very complex function, are intermingled, or lie in the closest proximity (*in gran vicinanza*) within the cerebral cortex." He verified the phenomena described by Munk, but he did not look upon the paralysis as psychical in character; that is, as the result of the loss of mere sensation of mental images or of psychic representations. It was purely organic and depended directly upon the injury to the motor cells, just as the disturbed sensibility depended upon the injury to the neighboring sensory elements. The motor centres, therefore, like the centres for sight and hearing, were of a complex nature, and in reality sensori-motor. Luciani says, "The motor centres are not localized within the cortical area called up to the present time 'the motor zone,' a name which we must hereafter abandon, since this zone is not exclusively motor. All the different regions of the cortex are more or less strewn with special motor centres. In order to be positive of having destroyed all the motor centres, one must remove the entire cerebral cortex." This is a remarkable statement of a singularly comprehensive theory, and leads us back once more to the vigorous discussions of Goltz.

Danillo has demonstrated that when the occipital lobe —which is supposed to be entirely sensory in function—is stimulated, the movements of the eyes are not simply reflex, as Ferrier taught, because they are still observed when, after the ablation of the entire cortex of the occipital lobe, the underlying white substance is electrically excited. In this white substance, therefore, there must be motor fibres springing directly from the cortex of the occipital lobe, unless we imagine that these same fibres go to the central lobules, and through them, rather than directly, transmit the motor impulse to the muscles of the eye. Even such a conception, however, would represent the process within the occipital cortex as reflective, but the outgoing impulse in such a case would be transmitted into an ordinary motor one before it finally reached the eye muscles. This difficulty might have been solved by removing, as Goltz has done, the entire cerebral cortex except that of the occipital lobe, then exciting the latter, and noting whether there were any movements of the eyes. I do not know whether such an experiment has been performed, but it is one which, if possible, is greatly to be desired. In fact, each of the sensory areas should be thus isolated, excited, and the effects closely studied in regard to the production of any motor phenomena. Since the distinguished physiologist of Strasburg has succeeded in removing vast amounts of brain-substance without destroying the lives of the dogs, it would seem that such experiments as suggested would be quite feasible. Bechterew has accomplished this to a certain extent, and finds that when the so-called motor areas of the central lobules are separated from the occipital centres, stimulation of the latter still gives the same muscular response. He argues, furthermore, that the movements of these muscles cannot possibly be of the nature of a simple reflex, because they are always uniform and localized within the same group. Stimulation of the occipital cortex excites motor points, therefore, that do not belong to the so-called motor zone, whose fibres pass only through the pyramidal fasciculi of the cord. These mixed centres being situated thus outside of the cortical areas to which the pyramidal fasciculi run, require for their excitation a much stronger and longer current; their destruction does not involve manifest disturbances of motion; and the movements which they give rise to are not very clearly differentiated from those caused by excitation of the true motor zone. Bechterew argues, therefore, that the sensory areas do contain motor centres, or at least motor elements, and he accounts for the fact of their stimulation requiring a stronger current and one longer in duration, on the ground that they do not connect with their corresponding muscles through the intermediation of the anterior roots of the spinal cord, but through certain masses of gray matter situate l deeply within the cerebral hemispheres, probably the optic thalami. According to Bechterew, then, there are two sorts of motor centres within the cerebral cortex. One variety is easily excitable and found in the central convolutions; the other is not so easily excited, and is scattered in among the sensory centres. This author bases his views chiefly upon his experiments on new-born animals, in which the movements of the ear and the conjugate movements of the eyes, for instance, can only be produced by direct stimulation of the corresponding areas of the cortex, one week and one month, respectively, after the movements of the limbs have been elicited by excitation of the central convolutions.

We have thus seen that the sensory areas of the cortex do contain motor elements, and that in all probability they exercise some special influence upon the associated muscular apparatus. From our rapid review of the modern theories among the English and German physiolo-

[1] Pflüger's Arch. f. Physiol., xxx., 253.

gists, we note that there is a growing tendency to believe that the motor centres of the central convolutions have sensory elements intermingled with them.

Luys [1] remarks that certain convolutions are distended and hypertrophied when certain cerebral symptoms have been present. In cases of delirium with delusions and hallucinations, he found a pronounced gibbosity of the paracentral lobule, to which is usually assigned a strictly motor function. It is unfortunate that no mention is made as to whether the delusions and hallucinations partook of the motor more than of the sensory type, whether they were mental representations of abnormal kinesis or æsthesis. They seem to show, at all events, that the cortical areas, both motor and sensory, are ideational and psychic, psycho-motor and psycho sensory, rather than simply organic. Mickle [2] has shown that hallucinations are due mostly to lesions of the sensory centres of the brain. Thus lesions of the angular gyrus produce visual, and of the temporal gyrus auditory, hallucinations, but not to the full extent that one would have been justified in anticipating. This shows, therefore, that sight and hearing are not dependent upon these centres solely.

The centres of general sensation, by which we mean those for touch, pain, and temperature, are usually located just back of the motor centres in the parietal lobe, between the calloso-marginal, parieto-occipital, and retro-central fissures. These are less clearly differentiated than the corresponding motor centres. It is possible that our ignorance in this respect is due to the general unreliability of sensory as compared with motor symptoms, and the difficulty which we experience in deciding always the exact nature of a certain symptom, which may be in fact purely sensory, but which by reason of the pain, restless discomfort, and reflex phenomena, unavoidably gives rise to abnormal movements and other motor appearances. The cells of the sensory areas are pre-eminently receptive, and neither physiological experiment nor clinico pathological observation has yet proved that they are in any way directly emissive. There can be little doubt but that they are connected with the motor cells of the cortex, and transmit special impulses to the latter. These two sets of cells, thus intimately united, form the summit or bend, as it were, of the arch about which the sensori-motor impulses travel, and are therefore in all likelihood the true physical basis of mind. The gross character of the general sensibility and of the movements of the body, as compared with that of the organs of special sense, necessitates the corresponding sensori-motor ideational centres of the cortex being so much more developed than the centres for the special senses. In connection with the sight and hearing, the proof is pretty conclusive that sensory and motor cells lie in close juxtaposition, and are most intimately conected by associating fibres. We infer that the same ideational centres cap the arches about which play the afferent and efferent impulses from the eye and ear. Hence I take it that the cerebral cortex is, after all, only a grand reflex centre. It is far more delicately organized and specialized, however, than the reflex centres of the cord, but in all other respects it is quite comparable to the latter.

The morphological and embryological development of the brain throws a flood of light upon the relations of its motor and sensory elements with each other. Among the invertebrates there is no brain or spinal cord such as we find among the higher orders of animals; nevertheless the spinal cord of the latter is clearly foreshadowed in the single series of sensori-motor ganglia, with their projecting nerves, found in the respective segments of the invertebrate. In the articulata and insecta we know that each segment is furnished with a little brain of its own, which is nothing more nor less than the summit of the reflex arc for that particular segment; and we furthermore know that the little brain of the most forward segment of the creature is but a ganglionic development of the cord, comparable to the various ganglia of the other segments. This is illustrated beautifully in the anatomy of the worms and insects. In some of the higher representatives of these orders the ganglia of the most anterior part of the body become massed together, undergo a somewhat fuller development to subserve the purposes of certain special sense-organs, and so in a measure assume the characteristics of the brain of the vertebrates. Note as illustrative of this the exquisite arrangement of the nervous system of the white ant (Termes), the fly (Musca), and the scorpion spider (Thelyphonus caudatus). In all of these creatures the various segmental ganglia are connected with each other like the cells making up the circuit of an electric battery; and some of them are so far advanced in development as to simulate, without representing, the brain and spinal cord of the higher mammals. As we proceed up the scale of evolutionary advancement we behold the nervous system becoming more and more complicated and specialized, assuming more and more the nature of the primate brain and spinal cord. In the vertebrates, and even their highest representatives, man and the apes, the primitive invertebrate appearance of the cerebro-spinal axis is not wholly lost. As Owen says, a vertebrate is but a clothed sum of segments, and therefore nothing more nor less than a higher invertebrate. In the lowest vertebrate, the *amphioxus lanceolatus*, there is only a spinal cord without a brain, and in all its habits this creature closely resembles the invertebrates. The peculiar character of the vertebrate skull, which is now admitted to be composed of metamorphosed vertebræ, the embryological development of the brain and spinal cord from the same germ-layer, and the similarity of the brain and cord up to a certain point, are all extremely indicative of the primitive characteristics of the encephalon of man. It seems to me that, if there be any truth whatever in the principle of evolution, it is not irrational to look upon the brain of the vertebrate as a highly developed portion of the spinal marrow, or of the ganglia of the spinal cord lying most frontad. If such be the case, we would expect some similarity between the arrangement of the sensori-motor elements of the brain and those of the vertebral segments of the spinal cord. The motor cells would not be identical with, but rather lie in close proximity and intimate relationship with their corresponding sensory cells. The extreme simplicity of this arrangement in the cord is, of course, quite obliterated by the overcrowding of so vast a number of nervous elements in so confined a space as the cranium. In this, however, we see somewhat a confirmation of the doctrine that the brain is a composite rather than a simple organ. The rolling about of the encephalic ganglia during their embryological and evolutionary development, in order to accommodate themselves to the constrained limits of the interior of the skull, results in a disappearance of that relative and simple arrangement of the sensory and motor elements which we see in the vertebral segments of the spinal cord. Nevertheless, the actual arrangement is even still such that we can faintly distinguish the resemblance to the spinal arrangement; we can recognize the fact that the ganglia and cortex of the brain are like the summit of the sensori-motor reflex arc as we find it more clearly presented in the cornual sensori-motor arcs of the spinal segments. In the brain it is seen, for instance, in the relative arrangement and mutual development of the cortical motor and sensory areas. General sensation is the least specialized of the sensory functions of man, and being co-extensive with the entire surface of the body proves man's connection with the lower animals. The corresponding development, the similarity in extent, and the relative antero-posterior location of the cortical sensory and motor areas, reveal their connection with similarly related parts of the body, and their similarity with the sensori-motor arcs of the spinal cord. Their excessive development in size and function gives them a preponderance over the corresponding segments of the cord, and in their function, especially, makes them appear as

[1] Le Progrès Médical, 1889.
[2] Jour. Ment. Science, October, 1881, January and April, 1882.

though they were voluntary, while the latter were involuntary. But voluntary and involuntary are relative terms, expressing different degrees of the same form of nervous activity. The psychic functions of the cerebral cortex are involuntary quite as much, if not in so glaring a manner, as the involuntary functions of the various segments of the cord. They are both alike a form of reflex action, but instead of the cerebral reflexes being direct and unconscious as they are in the cord, the more sensitively and highly organized character of the cortex causes them to assume the character of consciousness and self-will, while the connection of the cortex with the segments of the cord, as these in turn are again connected with one another, causes the cortical reflexes to be transmitted and perceived through the medium of the spinal centres rather than directly from the periphery of the body. In regard to the special senses of sight and hearing, the reflex sensori-motor arc does not pass through the cord or its ganglia, but is limited solely to the encephalic ganglia, while their sensory elements are always posterior to, and more or less in close proximity with, the motor elements, just as they are in the spinal segments.

The bi-lateral character of the spinal cord functions is duplicated in those of the encephalon.

At the session of the Société de Biologie of Paris, May 25, 1889, M. Dupuy reported a case showing the identity of the two hemispheres of the brain in regard to their functions. The patient possessed the power of moving the two eyes in different directions at the same time. Even the perceptive centres were distinct, despite the opinion of Horsley to the contrary, for the young woman saw objects with one eye, and when she tried to use both eyes together to view the same object she was overcome with dizziness. Magnan[1] has had four cases of this sort, one of which he reported in full. The patient heard one class of statements in one ear and another in the opposite ear. Agreeable ideas only were received on one side of the head, disagreeable ones on the other. Brown-Séquard long ago insisted upon, and physiologists are now beginning to recognize, the fact that the two hemispheres have identical functions. Hence I conclude that man's mental activity is largely automatic and reflective; that the cortical centres for ideation are constituted, related, and localized, with respect to one another, much like the reflex centres of the spinal cord, but that the finer development of the former gives them a finer degree of activity; that the sensory and motor elements of the cortex are not identically the same, but are separate, closely intermingled, and intimately connected with one another; and that an explanation is thus afforded of the simultaneous appearance of the two sets of symptoms, motor and sensory, in corresponding parts, when an irritative or destructive lesion is limited entirely to one or the other of the associated cortical areas.

If this progressive differentiation of function, based upon the principle of reflex action, continues within the encephalon as it has up to the present time in the evolutionary development of the nervous system of animals, it may ultimately happen that the mind will be capable of thinking upon two or more subjects at one and the same moment. Its capabilities will thereby be immensely enhanced, and the old dictum of the psychologists, that the association of two or more ideas is always consecutive, never coincident, will be overthrown. In his paper upon the "Molecular Dynamics of the Encephalon," published in the *American Journal of Insanity* for October, 1889, Dr. Williams has hinted at this future possibility. "Who knows," he asks, "but that the more fully evolved mind of the future shall learn, after the present mind has come to look with stunned discouragement upon the vast field of knowledge presented to its view by an advanced civilization, gradually to so adjust its fibres and its vessels by isolating them into separate fields momentarily (since the isolation is the acme aimed at by the higher mind in its concentrated workings to-day), that consciousness may, in fact, come to be not a single energy but a double, triple, quadruple, or multiple energy? Imagine, for example, the school-boy of the thirtieth century studying his mathematics visually with concentration, while orally listening to a lecture on a different topic. In all seriousness, there seem to be some reasons for believing that such a seemingly paradoxical mentality may be evolved." The tendency of mental development is certainly in this direction. It is already so striking a characteristic of the human mind as to place man infinitely above the lower animals. The separation of the various representative areas of the cortex, so that even now an animal can feel a prick in the foot, move his paw, and listen attentively to some unwonted sound all at the same moment, would seem to give promise of such a desirable future possibility.

A mere glance at the localization of the various centres of the cerebro-spinal apparatus, when compared with their relative functions, favors the view of the similarity of the brain and cord in regard to their primitive structure, and of the more ancient and higher development, both anatomically and physiologically, of the forward part of this nervous apparatus. When closely studied, it appears that inhibition is the highest function of all nervous matter. To inhibit an action presupposes a finer degree of development on the part of a nervous centre than merely to receive and transmit a reflex impulse. Inhibition is the real nature of mind, and is of so startling a character as to give the impression of absolute independence resulting in free will. The inhibitory function of the mind is admitted by all physiologists and psychologists, while the former assert that, were it not for this magnificent function of the highest of all the cerebral centres, our bodies would be kept in a constant state of convulsion through the manifold impulses which our nervous systems receive and reflect outward again to the muscles. Mills speaks of the higher psychical centres in the fore-brain as constituting the "inhibitory lobe." When we remember that all mentalization is based upon sensory and motor phenomena, and that the cortical areas for the psychical representation of these phenomena are quite definitely outlined, we are not surprised that there should be so much mystery surrounding the functions of the unknown areas of the brain. We note that injuries of the pre-frontal lobes result always in mental deterioration with abnormal psychical phenomena, while it is generally admitted by the best physiologists that one function of this *terra incognita* of the cerebral cortex is at least inhibition. Putting all facts and inferences together, then, we may safely conclude that the power of inhibition is the last of the acquired functions and the special characteristic of the most highly organized nervous matter; that this power resides in the gray matter of the pre-frontal lobes to a very high degree; and that therefore they are pre-eminently the psychical centres irrespective of the mind, being the result of the combined activity of all the sensori-motor elements of the cortex. And we furthermore infer that this anterior, highly specialized portion of the brain, differs from the rest of the nervous apparatus in structure and function in degree rather than kind. I take it, therefore, that all inhibitory centres are higher in development than the centres which they inhibit.

In the organic evolutionary progress of the animal the centres of the medulla that preside over the vital processes may be the oldest in time. They are first because they are necessary for life itself, but in the physical development of the animal there are centres which precede these in importance, and if, as the biologists tell us, the more highly organized matter is the most ancient, these important physical centres may, after all, be the oldest in time, while the centres of the medulla may be simply later differentiations of nervous matter set apart for the special regulation of the vital processes. It is probable, therefore, that the highly specialized, inhibitory, psychical centres of the fore-brain are the most primitive portions

[1] Journal de Méd. de Bordeaux, September 30, 1883.

of the nervous apparatus, so far as the evolutionary development of nervous matter goes; though from the embryological stand-point the cord is the primitive factor. In its influence upon the next lower centres, namely, the so-called sensory and motor areas of the brain, the fore-brain is comparable to the latter in their inhibitory influence upon the centres of the medulla and spinal cord. The inhibitory function is thus graduated from the highest psychical centres of the fore-brain down to the lowest organic centres of the cord, where it is practically so overpowered by the inhibitory influence of the higher centres that it appears entirely absent, permitting the cord to act only as a gross and unobstructed reflex centre. In its evolution, therefore, the whole cerebro-spinal axis seems to be but a series of connected sensori-motor ganglia or reflex couplets differing in different parts more in degree than in kind.

Even in the relative positions of the various subcentres of the motor area of the cortex, there can be recognized a certain correspondence with the associated parts of the body, if it be remembered that the head of man is bent sharply forward to accommodate it to the erect position of the body. In like manner with the corresponding parts of the body, the centres of the cortex follow one another from front to back in the order of the head, arms, trunk, and legs. This is illustrated otherwise in the fact, as pointed out by Horsley,[1] that the variation in the representation of motor functions is more marked as the motor area is traversed from above downward than from before backward. In other words, by carrying the faradic stimulus backward over the cortical motor area, the parts of the body affected follow more naturally in the regular order than if the same stimulus were carried over the same cortical area from above downward. The relative smallness of the representative area for the trunk muscles, as compared with that for the extremities, has been well accounted for by Mills, on the ground that the movements of the trunk are simply subordinate to the purposive movements of the limbs, and hence require only a comparatively small part of the cortex for their primary representation.

In summing up, then, I would offer the following propositions:

1. The motor and sensory areas of the cortex are not sharply distinguishable from one another, as was at first supposed by Ferrier and his followers.

2. Nor are they, as separate areas, of such character and unimportance as to render the action of the brain practically that of a uniform single organ, for which Goltz and his school contended.

3. There are separate motor and sensory centres within the cortex, but they are closely intermingled and most intimately connected with one another.

4. Both the motor and sensory areas have foci of special intensity; the former in the central, the latter in the postero-parietal, lobules.

5. While there may be a general inter-communication between all the sensory and motor elements of the cortex, there is the most intimate connection between the related sensory and motor cells that preside over corresponding parts of the body.

6. The primary function of these cortical sensori-motor groups of cells as couplets is reflective, like that of the sensori-motor reflex arcs of the various spinal-cord segments. This is shown by the morphological and embryological development of the cerebro-spinal axis; and it explains most satisfactorily the majority of the sensori-motor phenomena of physiological experiment and clinico-pathological observation.

7. Mentalization and thought itself are dependent upon sensori-motor phenomena, so that there is a strong probability that mind itself is the product of the activity of the entire cortex.

8. The power of inhibition is apparently the latest and highest differentiation of the functions of nervous matter, though it is itself a latent function of all nervous substance, varying in degree merely with the stage of the latter's development.

9. Inhibition is the special function of the fore-brain, and therefore endows this part of the nervous system with a commanding influence over the rest of the nervous apparatus. The fore-brain is therefore pre-eminently the psychic centre, though when exhaustively analyzed its inhibitory and reflex functions differ from the inhibitory and reflex functions of the ganglia lower down in the cerebro-spinal axis, in degree rather than in kind.

10. The sensori-motor functions of the cerebral cortex are psychical in character, and influence the external parts of the body only through the mediation of the cord and special ganglia, just as the highest of all the psychic centres, the fore-brain, influences the body through all the sensori-motor centres of the cortex, special ganglia, and spinal cord.

11. In fine, inhibition and reflex action being the special property of all nervous matter, they are found in varying gradation as the functions of the most highly organized matter of the fore-brain, which therefore seems to be the special seat of mentalization, down to the most primitive ganglia of the spinal cord, which retain only the lowest degree of reflex irritability.

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[1] American Journal of the Medical Sciences, April, 1887.

TWO CASES OF METASTATIC CHOROIDITIS.

By W. F. MITTENDORF, M.D.,

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Metastasis, as its name implies, means the transmission of a local disease from one part of the body to another. Among affections of this kind involving the eyes we have certain forms of rheumatism, especially of the gonorrhœal variety, tuberculous diseases, and cancerous growths, and lastly pyæmia; the latter is especially liable to lead to the formation of septic emboli in the uveal tract.

Cancer is looked upon by many as a local disease, and it will often give rise to metastatic affection. Sarcomatous tumors, for instance, are apt to involve the eye after having existed in other parts of the body, and even after the removal of the affected parts; sometimes shortly after the operation, at other times it may be a year or more before the sarcomatous growth is observed. In one case in which I diagnosed a sarcoma of the choroid in an old lady, it was found that the first symptoms of a disturbance of vision had been observed a few weeks after the removal of one breast for cancer—the patient being in bed at the time on account of the operation. The sight of the affected eye had not been impaired in the least before this, the patient having had glasses adjusted and her eyes examined shortly before the operation was undertaken. Two weeks later I examined the patient and discovered, as I said before, positive evidence of the existence of a small nodule in the choroid of the left eye, which in course of time developed into a well-marked sarcomatous growth. These tumors of the choroid are, of course, not always metastatic; they are generally primary ones, and are often followed by similar growths in other parts of the body, which sooner or later bring about the death of the patient. Of an even more striking and alarming nature are, however, those metastatic affections of the choroid which manifest themselves by a more or less extensive inflammation of this part of the eye, because they are always accompanied by a sudden and very dangerous blindness of the affected eye. Such an inflammation is generally confined to the eyeball; but it will frequently extend to the surrounding parts, such as the capsule of Tenon; and even the orbital tissue itself is liable to become involved, causing intense suffering to the patient, and not infrequently results in the death of the sufferer.

Metastatic choroiditis is of bacterial origin, and is usually due to some septic material, which has been absorbed in other parts of the body and is then deposited in the most vascular tissues of the eye, the uveal tract, and im-

plicates either the choroid, the ciliary body, and the iris, or all of them. The absorption of this dangerous material does not infrequently take place at a very remote part of the body, from the subinvoluted uterus after confinements, for instance, or even from septic processes going on in the lower extremities; though, strange to say, it is very rare that in purulent diseases of the ear, which is in so close proximity, the eye becomes affected; it is here the brain which is most liable to become involved, and, as is well known, the formation of metastatic abscesses of the brain is not very rare in severe purulent diseases of the middle ear. The channels by which the septic material is transmitted cannot be definitely given; whether the blood-current or the lymph fluid are the carriers has not yet been definitely settled. The most recent investigations seem, however, to point to the blood-vessels as the probable source, and in support of this view we have especially the report of a case of metastatic choroiditis occurring in pyæmia after a complicated fracture, by L. Weiss, made at the Ophthalmological Congress in Heidelberg, in 1875, in which the microscopic investigation revealed an actual thrombosis of the choroidal vessels of the affected eyes.

On the other hand, those cases complicating severe meningeal troubles, or which occur at times almost epidemically after severe forms of typhoid fever, where the source of the septic material is without doubt from the ulcerated intestinal glands; or after severe cases of small-pox, or even in measles, and especially in cerebro-spinal meningitis, the probability is that by the lymph-spaces and channels the bacteria are transmitted to the choroid.

The former view has its defenders in such authorities as Knapp, Virchow, Weber, and others, and the blood-vessels in the neighborhood of the infection have always been found to be full of septic microbes. The latter seems more probable in a certain number of affections on account of the connection of the lymphatics of the choroid with the arachnoid spaces of the brain.

Metastatic diseases of the eye, especially if we omit those rheumatic inflammations which have sometimes been looked upon as of a metastatic nature, are usually due to some severe disease or a traumatism of which septicæmia is the result. Of these affections the puerperal state furnishes the most frequent, and likewise the saddest, cases of this kind, one of which was reported by Dr. T. S. Parley some time ago. Next to this class come suppurating diseases of the joints; in fact, in all those purulent processes occurring in such parts of the body where, on account of the rigidity of the tissues, there is apt to be a patency of the veins, the absorption is more liable to take place. This affection has likewise been observed in severe constitutional diseases associated with, or followed by, suppuration, such as the exanthematous fevers, cerebro-spinal meningitis, and others; and, as before mentioned, there have been epidemics of these diseases, marked by the occurrence of a large number of metastatic affections of the choroid.

A choroiditis of this latter variety does not always manifest itself in a very severe form; there are cases where the deposit of the septic material does not appear to lead to a complete breaking down of the affected parts, and where a partial recovery is noticed; in these cases, which are not so rare, the nature of the inflammation set up by the septic embolus is perhaps more of a plastic than of a purulent nature. They are observed in children after attacks of meningitis however. Even these milder cases lead, as a rule, to great impairment of vision, and even to atrophy of the eye and complete blindness.

I have seen cases of this kind during several of the epidemics of cerebro-spinal meningitis which we had here several years ago, in which the first symptom of any trouble of the eye was the appearance of pus in the anterior chamber and discoloration of the iris; the patients being too ill or too small to complain about the blindness which we know exists with, and is one of the earliest symptoms of, this disease of the eye. In these cases it is hardly possible to think of a direct extension of the meningeal inflammation along the optic nerves to the choroid; it appears more plausible that the peculiar microbes found their way through the lymph-spaces and the sub vaginal space of Schwalbe, and from here travelled to the choroid.

We do not often have occasion to see cases of this kind at our ophthalmic clinics and dispensaries, because the original diseases are usually of such great severity that the patients are kept in general hospitals, or do not recover at all. The few cases which I have seen were very sad ones; as a rule, both eyes become affected, and when not phthisis bulbi and hopeless blindness existed there was so much plastic material present that the cases resembled those of a glioma of retina; there were white glistening masses of exudation projecting into the vitreous humor and reaching almost up the lens, and even surrounding the latter on all sides in some instances. The history and the absence or scarcity of superficial retinal vessels on the surface of the growth, and existence of posterior synechiæ of the iris, made the diagnosis between them and a retinal glioma as a rule quite easy, although the similarity of the appearance of these affections is so striking that our English confrères have called it pseudo-glioma. The prognosis of these cases is naturally very bad. The difficulty of diagnosis referred to exists of course only after all inflammatory symptoms have subsided and the history of the original disease is unknown. During the acute state there is no difficulty to recognize the disease, even in very small children.

The true metastatic suppurative choroiditis, as we observe it after suppurative inflammation of the joints, after purulent endocarditis, during the puerperal state, or after empyema and other septic diseases, gives us, however, an entirely different clinical picture, and so severe are the accompanying symptoms that early English writers have justly spoken of it as an abscess of the eye rather than as a choroiditis. If the disease is so marked on its onset, it will soon implicate the neighboring tissues, and has been named a panophthalmitis, a disease which is so much dreaded after severe ulcerations or injuries of, or after operations upon, the eyeball. The metastatic choroiditis is usually of this variety; it is ushered in and accompanied by chills and marked febrile disturbances; some sharp shooting pains are likewise felt in the beginning of the disease, and more or less complete blindness follows quickly; the iris becomes discolored, pus is liable to show itself in the anterior chamber, and the capsule of Tenon becomes soon implicated. There is marked ciliary injection, although this is soon masked by the intense hyperæmia of the conjunctiva; the lids become œdematous and marked chemosis raises the conjunctiva of the eyeball in the form of semi-transparent bags which protrude through the palpebral opening. The proptosis of the eyeball becomes now quite striking, the swelling extends to the surrounding parts of the face, and the pain, which soon becomes of a hemicranial nature, is so intense that the patients are in a very deplorable condition; they cannot sleep and are more or less delirious. The pupillary reflex is lost, and the fundus is not visible with the ophthalmoscope. The eyeball itself is very painful to the touch and shows marked increase of tension. On account of the purulent infiltration of the vitreous, which takes place almost immediately after the onset of the disease, the pupil appears yellowish-white and is more or less dilated in the majority of cases, on account of the high intra-ocular tension, which has a paralyzing effect on the sphincter of the iris, and neither light nor mydriatics will affect it. The cornea is anæsthetic and, if not actually infiltrated and on that account opaque, appears steamy and without its usual lustre. Were it not for the absence of a purulent discharge of the conjunctiva, the superficial appearance would not be very unlike that of some severe purulent forms of conjunctivitis, of the gonorrhœal variety, for instance.

The iris and the ciliary body are early implicated, and this gives rise to the severe hemicranial pains, as well as to

the great tenderness of the eyeball to the touch. At times there is some plastic exudation which gives rise to adhesions of the iris to the lens, but as a rule the product of the inflammation is purely of a purulent nature. On account of the presence of pus or other inflammatory products, the color of the iris is changed and contrasts strangely with that of the other eye.

Sooner or later the pus will force its way through the sclera in the neighborhood of the cornea, most frequently in the region between two recti muscles; the acute symptoms subside and the eyeball will get soft and become phthisical and recede into the orbit. In milder cases there may not even be a perforation of the eyeball, but as the inflammatory symptoms subside the eye becomes soft and the exudation is gradually more or less completely absorbed, or undergoes degenerative changes and contracts. However, vision is rarely preserved, even in the very mild attacks.

Cases of metastatic purulent choroiditis are not often met with in ophthalmic hospitals, as the patients are as a rule too sick from the original disease to seek the advice of a specialist, and are therefore treated at home or in general hospitals. In looking over the history of the subject, I find only four or five cases of this kind reported during the last fifteen years. One of the most interesting ones is that reported by the chairman of our meeting, Dr. Thomas R. Pooley, to the State Medical Society at Albany in the year 1875. In this case the disease developed fourteen days after a very severe confinement, and although perforation did not take place, all parts of the eye were so thoroughly involved in the inflammation that the patient would have been blind, had she lived.

Another case was reported in "Schmidt's Jahrbücher," 1881, where a physician infected himself by using an impure hypodermic syringe, which was followed by septicæmia and death. During the progress of the disease a metastatic choroiditis developed in the right eye, and resulted in perforation of the eyeball.

The next case was reported likewise in "Schmidt's Jahrbücher," and is that of a man who had an abscess of the neck, which was followed by suppurative choroiditis and loss of the eye.

Dr. Sutphen reported to the American Ophthalmological Society a case of double-sided metastatic choroiditis of both eyes after meningitis, which, however, appears to have been more of a plastic than of a purulent nature.

On account of the scarcity of the disease, and the limited number of cases reported during the last ten or fifteen years, I shall proceed to give the history of two cases of metastatic choroiditis which I had under observation a short time ago.

Case I.—Mr. N-—, laborer, aged forty, was admitted to Bellevue Hospital on account of a swollen and painful knee-joint, which was supposed to be rheumatic, as no history of an injury could be elicited. The man had a moderate amount of fever, and was in a rather weakened condition. The affection of the knee-joint did not improve and the temperature remained high. The knee was opened and the presence of pus demonstrated a purulent affection of the joint. During one night, a few weeks after the operation, the patient complained about flashes of light and great pain in his left eye. The next morning he found that he could not see well. There were hardly any signs of inflammation visible, but the pain kept on increasing during the day, and the next morning the eyeball appeared red and irritable, the upper eyelid was somewhat swollen, and there was some slight prominence of the eye. Ice compresses were now applied, but the pain and other inflammatory symptoms increased steadily, and the patient could not even see the window with the affected eye. During the afternoon of the third day that the eye had begun to give him trouble I was called in to see the patient. I found very marked swelling of the lids, chemosis, and an enlarged eyeball, due to a participation of the capsule of Tenon. The cornea was a little hazy, and the pupil presented that peculiar yellowish-white reflex which is so characteristic of the presence of pus in the interior of the eye, especially in the vitreous humor. The pain had now become intense, and the temperature was very high; he had marked chills during the night and morning preceding my visit, and had not the slightest perception of light in this eye. I knew that the vision could never be restored, and as the poor fellow suffered so intensely, I thought that enucleation of the eye would be the shortest way of giving him relief. However, the surrounding parts of the eye, in fact all the contents of the orbit, were so inflamed that I decided not to do it. I ordered hypodermic injections for the relief of the pain, and had hot applications made to the eye. Atropine had been used previously, but had utterly failed to diminish the pain, and I had it discontinued. This treatment by hypodermic injections and the local applications of hot water was kept up for three days, when the presence of pus in the conjunctival sac indicated an opening of the abscess. Thus pus had made its way to a point near the upper and outer part of the eye in the sclero-corneal region. The pain soon subsided, the inflammatory symptoms improved, and a short time later I discontinued my visits. However, the patient never regained the slightest amount of vision and the eye became phthisical.

Case II.—A carpenter, aged thirty-six, living in one of the small neighboring towns. He hit his right elbow, an insignificant contusion resulting. He did not pay much attention to the injured arm at first, but soon the inability to use it, the great increase of the swelling of the elbow-joint, and great prostration induced him to consult his family physician, who applied a bandage and ordered rest and tonics However, the patient did not do well, and had to take morphine constantly to relieve the constant pain in the arm. About two weeks had passed in this way when the doctor began to perceive a swelling of the right parotid gland, which was treated by iodine application. About a week later the right eye began to be painful, and to look red. The pain was deep-seated and of a tearing, lancinating character, and the sight of the eye became rapidly poor, so that he could hardly see the light of a lamp. As the pain in the eye became more and more severe, I was called upon to remove the eye, especially as the patient threatened to commit suicide, unless he could get relief. When I examined the patient I found a moderate amount of exophthalmos, some hypopyon, and the vitreous humor full of pus. The eyeball was very sensitive to the touch, and he could not see the brightest light with this eye. The other eye was normal and had good vision, although the patient pretended that he could not see near as well with it as he had before the other eye became sore.

The patient was very weak, and although he had not much fever, he had a very high pulse. The parotid gland was very large, but had evidently not suppurated. The elbow was still red and swollen, and was discharging a moderate quantity of fetid pus. I removed the eyeball, which I found to be almost completely changed; the choroid, retina, and the ciliary body were all infiltrated, and the iris was almost entirely adherent to the periphery of the lens. There was only a moderate amount of bleeding after the operation, and the family physician allowed this to continue for several days. The orbital tissues appeared normal, at least the tunica vaginalis of the eyeball was not so much changed as I had expected to find it. The patient appeared to rally soon after the operation, so the doctor of the place informed me; but some two or three weeks after the enucleation the headache returned worse than before, so that for several weeks the patient had to take anodynes constantly; he became weaker and weaker, and died in a comatose condition, from what the doctor supposed to be a cerebral abscess. An autopsy was not allowed by the family.

These two cases were evidently both of the metastatic, or as they are called by some writers, embolic variety of

purulent choroiditis, and they were both, it is safe to assume, due to the transmission of pathogenic microbes from the purulent inflammation of the elbow or knee, respectively.

The treatment of these cases ought not to vary from that usually resorted to in purulent affections of the interior of the eyeball. In milder cases atropine and hot compresses and anodynes, if necessary. In the severer cases of this affection either a free incision, evisceration, or entire removal of the eyeball may become necessary. Although the removal of an eyeball with panophthalmitis is not considered safe, yet if it appears that the capsule of Tenon is not very much involved, I consider the operation indicated; for I do not think that either the death of the patient on whom I operated, or the supposed cerebral abscess, had any direct connection with this operation, and that the patient would have died, operation or not; and that the operation gave him, at least, great comfort during the two weeks of his life. As long as the opportunities for the absorption of the septic material remain favorable, abscesses are liable to form in any part of the body, and the life of the patient is in constant danger.

I have become quite enthusiastic of late about the good effects of a corrosive sublimate solution applied to the eye by means of an eye-cup for several minutes at a time, and using it in the strength of 1 to 5,000, or 1 to 8,000, if the former should prove a little too irritating. I have used this remedy for wounds of the cornea with suspiciously infiltrated margins, in cases of deep-seated infiltration of the cornea, and in cases of obstinate plastic and purulent iritis, with so much success that I should not hesitate to use this germicide externally as well as internally in cases of this kind of choroiditis.

Does not an atropine solution reach the interior of the eye by osmosis very easily? Why should not a corrosive sublimate solution penetrate sufficiently to exert a beneficent influence on a purulent disease of the deeper-seated membranes of the eye, which we cannot reach in any other way? And why should not the internal use of the drug, which is supposed to have such a beneficial effect on the microbes of diphtheria, have likewise a good effect on this disease of the choroid, as well as on the original purulent disease which gave rise to it? I look upon the bichloride of mercury as the great remedy of the future.

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A MODIFICATION OF TEAL'S RECTANGULAR FLAP OPERATION IN THE AMPUTATION OF THE EXTREMITIES.

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In the amputation of the extremities, "save as much as possible" is a well established rule, with few exceptions, and the preservation of the articulations is a question of paramount importance. The suggestion of any method working to these ends needs no apology.

It is true in many injuries, especially in crush wounds, necessitating amputation, that upon one side a greater amount of sound tissue is found than upon the other. This condition suggests Teal's operation. But by this method, in order to secure sufficient covering for the stump, the long flap must be equal in length to half the circumference of the limb at the point at which the bone is to be divided, and the short flap one fourth this circumference. Both are rectangular in shape and equal in breadth to half the circumference, so, even by this plan, considerable of bone or an articulation may have to be sacrificed.

In Teal's method the ends of the long and short flaps are united. The modification suggested consists in a different way of coaptating the edges, by which shorter flaps will suffice. Integument and subcutaneous tissue alone is used, a modification recommended by Lister. The long flap is but one-fourth the circumference of the limb in length and half the circumference in breadth. The short flap is of the same breadth, but need not extend in length beyond a level with the bone. With this amount of integument the stump can be covered by bringing the sides of the long flap into coaptation with the end of the short one. Since the length of the long flap equals one-half the width of the short, the two sides meet in the centre of the short flap, and half the end of the long flap falls against the other half, which effects a complete covering of the bone.

The decided advantage of this method under certain conditions can be better appreciated by recounting a case of reamputation of the leg. The primary amputation had been through the tibia at the lower margin of the tubercle. The anterior flap had sloughed away to a level with the ends of the bones. The posterior flap had retained its integrity, but its length was less than one-fourth the circumference of the limb at that point, until much of the remaining muscular tissue had been cut away and the head of the fibula removed. Then by giving it a rectangular shape and bringing its two right-angled corners up to a central point in front, as shown in the illustration, the stump was covered.

By any other method more bone would of necessity have been sacrificed, which would have involved an invasion of the joint. The result was a firm stump and a saved joint.

Progress of Medical Science.

Suppurative Cholecystitis.—Dr. Lindner (*Berlin. klin. Woch.*, No. 11, 1892) records an interesting case of operation on the gall-bladder. The patient—a woman, aged twenty-eight—had previously suffered from perityphlitis and recovered. Symptoms pointed to suppuration of the gall-bladder, and an incision made along the outer margin of the rectus muscle, on the right side, brought the gall-bladder, which was greatly distended, into view. Upon opening the organ a quantity of pus and a good-sized calculus escaped. The walls of the bladder were sutured to the abdominal wall, and the cavity was thoroughly washed out and drained. After a few days bile escaped instead of pus, and recovery was complete after five weeks. Three months later, however, the patient returned complaining of colic and other symptoms as before. A fistula had remained after the first operation, and still discharged bile. On enlarging the fistulous tract and passing the finger, a calculus was discovered in a blind pocket, but separated from the canal by what seemed to be a membrane. The liver and gall-bladder were exposed by an abdominal incision, and it was then discovered that the latter was divided into two chambers by cicatricial tissue. The return of symptoms had been caused by impaction of a calculus in the opening between the two cavities, and its removal was found quite difficult. Recovery soon followed the second operation, and after it the previously existing fistula closed.

Primary Urethral Tuberculosis Simulating Stricture.—Dr. Fenwick (*British Medical Journal*, May 28, 1892) believes a primary urethral deposit to be most rare. It should afford, however, a better prognosis here than in any other part of the tract, for the constant passage of urine over the surface sweeps away the irritating secretions. Although he can only point to one case of primary disease—and that he mistook for stricture until

he had examined with the electric urethroscope—yet he has had several cases in which the urethra was invaded from foci in the prostate and bladder. A consideration of these permits him to state that when tubercle affects the bulbo-membranous section of the canal, it is very likely to be mistaken for stricture, for the swelling offers a decided obstruction to the exploring *bougie à boule*. You recognize the difference between this swelling and stricture by the extraordinary amount of pain which is caused by the most delicate instrumentation, and this even after a strong solution of cocaine has been previously applied. The surface bleeds on the slightest touch, and severe rigors often follow any examination. These are not only alarming, but are positively dangerous when the kidney is latently affected. A perineal fistula—Nature's attempt at a radical cure—often forms rapidly in the post-scrotal region. All manipulation is out of the question, but much good may be done by iodoform urethral bougies gently insinuated into the deep urethra, the general health being at the same time well supported.

New Method of Examining Specimens of Blood.—A method of making permanent preparations of blood has recently been described by Dr. R. Muir, in the *Journal of Anatomy*, which promises to be of great use in clinical investigation. The specimens thus prepared can be preserved indefinitely, and compared with others obtained from the same patient at subsequent periods. The method is quite simple. The films are prepared on coverglasses in the usual way, and, before they have time to dry, are placed in a saturated aqueous solution of corrosive sublimate (to which a little common salt may be added) for half an hour. The corrosive sublimate is then washed away with a three-quarter per cent. solution of common salt, and the film is further hardened by a few minutes' immersion in methylated spirit, and then absolute alcohol. The specimens can then be stained by the ordinary reagents, very good results being given by double staining with eosine and hæmatoxyline, the red corpuscles being stained by the eosine, while the nuclei of the leucocytes are prominently revealed by the hæmatoxyline.—*The Lancet*, May 28, 1892.

Tetanus Immunity.—Dr. Hoegh, in the course of an article on tetanus (*Northwestern Lancet*, June, 1892), says: "Modern investigators have discovered that there are certain animals which have a more or less pronounced immunity against certain bacterial diseases, and that this immunity is due to the presence in the blood-serum of a certain chemical compound belonging to the group of the albumins. Thus the rat possesses immunity against anthrax, the dog against tetanus, the field-mouse against septicæmia. The chemical substance in the serum of these animals is antidotal to the poisons produced by the respective bacteria. But this chemical compound can artificially be produced in animals, and Behring and Kitasato have in this way succeeded in making animals immune to tetanus. But not only this, the serum of animals made immune does not only, when injected into other animals, confer immunity against subsequent inoculations, but has more or less curative effect when the animals already have become subject to the developed disease. Tizzone and Centanni isolated from the serum of such immunified animals the anti-tetanic principle, and Tizzone claims to have used it with success in the human being. It was with this anti tetanic principle that several cases referred to were successfully treated."

Paroxysmal Tetanic Spasm in Chronic Hydrocephalus.—Dr. Carter presented part of a brain taken from a girl aged twelve years. When seven months of age she had frequent convulsions associated with retraction of the head, and was ill for thirteen weeks. Was then fairly well until eight years of age, when she had a severe headache, followed by insensibility which lasted twelve hours. Three months before death the headache (generally occipital) returned, with frequent vomiting. In spite of this she was not ill enough to give up attendance at school for two months. She then became subject to paroxysmal convulsive attacks, in which the head was retracted and the whole body bent backward, and accompanied with severe pains in the back of the head. The attacks lasted from one to three hours and recurred daily till the time of her death. There was marked double optic neuritis. Cerebellar tumor in the median lobe was diagnosed, but at the post mortem nothing was discovered beyond evidence of chronic meningitis about the neighborhood of the medulla oblongata, with firm adhesion of the latter to adjacent parts, and hydrocephalic distention of all the ventricles.—*The Birmingham Medical Review*, June, 1892.

The Bacillus of Eclampsia.—Dr. Gerdes, in the pathological department of the University at Halle, has found a bacillus in the liver, lungs, kidneys, and blood of a severe case of eclampsia. Cultures of this bacillus, when inoculated in rats and mice, cause shallow respiration, coma, subnormal temperature, and in the mice convulsions. It is very virulent, causing death in a short time. In guinea-pigs intra-venous injections caused convulsions, intra-peritoneal did not. The bacilli were found often in the form of bacillary emboli, the starting-point of which was probably a focus in the placenta.—*Boston Medical and Surgical Journal*, June 2, 1892.

Soporific Effect of Sulphuretted Hydrogen.—At a meeting of the Greifswald Medical Society, Professor Schulz gave an account of some experiments on animals to determine the soporific effect of sulphuretted hydrogen. He put the subjects of the experiment under a large bell-jar, the air of which was charged with various definite proportions of sulphuretted hydrogen. In some cases restlessness and asphyxia were produced, in others sleep. Rabbits appeared to be better able to resist the effects of the gas than other animals, as they did not fall asleep until after they had been half an hour in an atmosphere containing from 0.27 to 0.44 per cent. of sulphuretted hydrogen. Dogs required from 0.07 to 0.17 per cent., and cats from 0.09 to 0.1 per cent., sleep coming on in about an hour. When a very small quantity of sulphuretted hydrogen was present the animals became drowsy. The new hypnotic drugs—sulphonal, trional, and tetronal—doubtless give off sulphuretted hydrogen in the body, for if they are put into a flask along with some fresh liver tissue at a temperature of 99° F. this gas is evolved, the reaction appearing to be even more energetic when the liver has just begun to putrefy.—*The Lancet*, June 4, 1892.

Flatulence in Stomach Disorders.—Dr. Perujo believes that eighty per cent. of dyspeptics suffer from flatulence, and that in twenty per cent. of cases it is very severe and quite alarming. The origin of the gas may be from the atmospheric air, from the diet, from the blood by exosmosis, or from decomposition of the fecal matter. Chemical analysis of the gas reveals oxygen, azote, hydrogen, carbonic acid, protocarbonated hydrogen, and sulphuretted hydrogen. Pain is the chief complaint, and at times it is so severe as to simulate poisoning. As to treatment, regimen plays an important part. The patient must masticate all food laboriously, must lead an active life, and regulate the hours for taking food with much care. Abdominal massage acts beneficially by stimulating the digestive organs. Applications of heat give good results. This can be done by the use of poultices or the hot-water bag. The sulphites and hyposulphites, the bicarbonate of soda, soda, charcoal, bismuth, carbonic acid, creosote, etc., are usually employed with success, but the salts of soda, bismuth, and charcoal do not in any sense absorb the gases. Anti-spasmodics and aromatics are not to be neglected, while the rectal tube through which the gas may escape, electricity, and capillary puncture have their uses in certain cases. In the author's opinion there is no lasting success without the most rigorous dietetic measures.—*Rev. Intern de Bibl. Med.*, April, 1892.

MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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PROGRESS OF THE CHOLERA.

WITHIN the confines of Russia there has apparently been but slight advance of the cholera epidemic during the past week. The reports from that country are, however, so conflicting that it is difficult to estimate correctly the extent of the ravages caused by the disease. Even if we could be confident that the official reports were strictly honest, the figures would necessarily be incomplete, for they are sent to St. Petersburg from the infected regions partly by telegraph and partly by mail, and the confusion as to dates that results is very great. Then there is no reliance to be placed upon the local officials, who, for one reason or another, often conceal the actual number of cases. The total number of new cases reported daily is in the neighborhood of six thousand, while the deaths average about half that number.

But what is of much more vital interest to this country is that the disease has broken out among the Russian refugees in Hamburg and also in Havre. The first cable reports brought the news that there were several cases of "cholerine" at Hamburg, but an investigation by the American Consul in that city brought to light the fact, already suspected, that the disease was true Asiatic cholera. The Consul at once informed the Washington authorities of the appearance of the disease at Hamburg, and the latter have warned the health officers at the different ports. In view of the fact that hundreds of immigrants are brought direct from Hamburg to this country every week, the majority of them to New York, it is not at all improbable that some cases of the cholera will appear here. Indeed, it is thought possible that the steamship La Touraine, now on the way to this city from Havre, may have some cases aboard, for the American Consul at that port has cabled the authorities here to be on the lookout for the steamer. There is, however, as we have before said, no ground for alarm, even should a few cases reach quarantine. There is urgent necessity for more than usual vigilance on the part of the health officers of the port and of the city, but they are alive to the danger, and we have every confidence that they will be able to cope with the disease should it make its appearance here. And the same, we are happy to believe, may be said of the Marine Hospital Service and of the quarantine authorities at other threatened ports on our coast. It is reported from Berlin that Dr. Koch has been sent to Hamburg to confer with the authorities there in regard to the most effective measures necessary to combat the disease. This sounds somewhat like closing the barn-door after the theft of the horse, but we may still hope that it is not too late to do something in the way of staying the further advance of the disease.

The United States Consul at Teheran cables, under date of August 22d, that there are four hundred deaths daily from cholera in that city, and that many cases are under treatment at the American hospital there.

EXOPHTHALMIC GOÎTRE.

CERTAIN points of special interest concerning this disease are accentuated in a preliminary note by Dr. Louise Fiske Bryson, in the *Post-Graduate*, July, 1892. Up to the present time, for lack of sufficient and minute investigation that is possibly due to preconceived opinion as to origin, exophthalmic goître still remains a "mysterious malady," as Gowers puts it, a train of distressing symptoms that may be relieved in turn, and may also disappear spontaneously. Under favorable circumstances, according to Charcot, the disease tends to recovery in from one to five years. A good working hypothesis is to consider it a disorder of nutrition, respiratory in its first manifestations and digestive afterward, acted upon later by some special exciting cause, as infection, trauma, strain, or shock.

The treatment securing best results has been a combination of mechano-hydrotherapy and rest and exercise, together with the strictest possible attention to details of dietetics and general hygiene. The drugs that have been most helpful are nux vomica, arsenic, and digitalis sparingly. Moderate altitudes instead of the sea-level are usually the best health-resorts for sufferers from this disease. Hours of rest and exercise must be prescribed, the kind and amount, and never left to the patient's discretion.

In exophthalmic goître, there are always present some alterations in respiratory processes. Respiratory expansion is lessened in more than half of all cases that come under observation. Respirations are increased from twenty to thirty a minute. Increasing chest expansion is of great importance, as the physiology of respiration includes an influence upon the heart itself, upon the pulse, upon blood-pressure, and upon the pulmonary circulation. To secure normal respiration, a somewhat novel plan of treatment suggested itself to the author of the preliminary note.

Deep respiratory movements by means of a variety of exercises that raise the arms, expand the chest, and cause deep and regular breathing, have been secured through the agency of an apparatus called the Respirator, invented by Dr. Charles Fayette Taylor, which embodies in mechanical form Ling's principles of artificial respiration. The patient sits in a large chair or couch with a jointed, movable back, grasping with the hands padded handles suspended from long levers placed at the back of the apparatus. These come to the patient's side in such a way that, when grasped by the hand, the body is in perfect repose. Steam power is now turned on, the levers rise, the arms are drawn upward, the muscles of arm, chest, and abdomen put upon the stretch, while the upper part of the cushioned back moves down and the chest is

arched forward. The levers then descend, muscles relax, and the chest returns to its first condition. Respirations adapt themselves to the motion of the levers. When they rise, a deep and full inspiration is taken, the air being forced—though in the gentlest manner—to enter into and distend the alveoli. When the levers return, expiration is accomplished.

Improvement is rapid, for the chief value of mechanotherapy in nervous or general constitutional disorders is to regenerate the mass of blood as a whole, to combat individual symptoms, and to favorably influence the mental state. The Respirator possesses certain advantages over more active and voluntary movements. It exercises without fatigue, without strain upon the will-power, and without the intervention and activity of another's personality. The action is entirely passive, as it is steam, an unseen and remote agent, that raises and drops the levers without noise, bustle, or conversation.

The effects of systematized respiratory movements, as thus brought about, are, first, to increase the capacity of lungs for air; second, to strengthen the elastic tissue of the alveoli; to open up inactive air-cells; to promote free expectoration; to loosen adhesions (pleuritic, etc.); to stimulate pulmonary circulation, nourishing the lung-substance; to rectify errors in the general circulation; and to increase the aëration of the blood, thus nourishing the tissues and increasing metabolism. In the treatment of circulatory disorders, many of Oertel's arguments to prove the efficacy of mountain climbing apply also to the use of artificial respiration, according to Ling's principles; for Oertel's aim is to reduce the quantity of fluid in the body, to oxidize the accumulated fat, to effect a balance between the arterial and venous systems, and to strengthen the heart-muscles.

A MEDICAL DEFENCE OF THE OPIUM HABIT AMONG EASTERN NATIONS.

The *Indian Medical Gazette* publishes a number of articles from native and local physicians, detailing their experience and giving their opinions as to the use of opium by the inhabitants of India. The *Gazette* says editorially: "The terrible pictures which they [the opponents of the use of opium] draw regarding the effects of opium, are not recognized by medical men in India, and they seem to us as far from the reality as many a Hindoo's view as to the injurious results following from the indulgence in that beverage which "cheers but not inebriates."

"Experience proves it is useless to attempt to make people better by legislation, and moreover we hold that the moderate use of opium in an Eastern country will have the same calmative and stimulant effects as the use of tobacco, and that the excessive use of tobacco is almost as productive of mischief to the human constitution as that caused by the abuse of opium. Observations in this country demonstrate that moderate opium eating or smoking, far from being that unmitigated evil which those unfamiliar with the subject or with the people and their customs maintain it to be, is, on the contrary, a solace and mainstay to many who otherwise would be unfitted for the battle of life."

The proposal to abolish the use of opium in India except for medical purposes, would, in the *Gazette's* opinion, be undesirable for several reasons: "Firstly, because opium in moderation does no harm; secondly, because it does good to a large proportion of those inhabitants who live in malarious districts; thirdly, in some parts of India it bears an important part in some of the ancient customs of the people; and fourthly, because the attempt to carry out such an abolition would create a vast deal of suffering and hardship on the people without bestowing upon them any corresponding benefit."

Dr. Crombie collected the statistics of the asylums of Lower Bengal for the ten years 1881 to 1890, with the following result: Of the 2,202 admissions, 641, or 29.1 per cent. were gunja smokers, 117, or 5.3 per cent., were spirit drinkers, and 8, or 0.36 per cent., were opium eaters. Figures from the Asylum of the Bombay Presidency give similarly low results for the opium eaters.

On the whole, the opinion of Indian physicians, according to the *Gazette*, is against the attempt to restrict opium eating. It must be said in comment on this, however, that at least one of the physicians who make a favorable report is confessedly an opium eater himself. The very high percentage of cases of insanity due to gunja smoking (cannabis indica), shows that all popular narcotics of the East are not harmless.

THE LONGEVITY OF ACTORS.

It is pretty well established that brain-workers who live anywise temperately are long-lived. But it remains to be shown that actors and actresses have the same happy characteristics. There is a prevalent impression among the fraternity that all good actors die early of paresis, and of course no account is taken of the poor ones. A Paris correspondent of the *Manchester News* now affirms that Parisian actors and actresses, at least, are long lived. He cites fourteen instances of popular artists who have reached or passed the age of seventy. Of course this is hardly conclusive, yet there can be no doubt that many of the really great actors have lived long lives, for such persons must be naturally endowed with great vitality in order to do their work, and they must necessarily conduct their lives with some regularity. The young geniuses who burst upon the public and win their laurels early, are generally overcome by their success and succumb to wine, women, and excitement.

Post-mortem Delivery.—A remarkable case connected with the post-mental state is reported by Dr. Bleisch. A woman at term died during labor from some cause or other before delivery was completed, in the presence of the midwife. The doctor, who arrived two hours later, verified the condition of things, but did not extract the child, and the corpse was laid in the coffin five hours after death, without anything unusual being noticed by those present. Three days later the coffin was reopened for the purpose of performing a necropsy, when it was found that the child had meanwhile been expelled, the womb being everted and protruding beyond the genitals. The connection between fœtus and placenta was intact. How such an event can come about, whether merely in consequence of the formation of gas in the abdominal cavity or by the occurrence of post-mortem contractions of the uterus or otherwise, it is impossible at present to state.

News of the Week.

Disappearance of a Naturalist.—Mr. Hermann Foll, a well-known zoologist, started in March last upon a scientific expedition in the Mediterranean. He sailed from Brest in the steam yacht Aster on March 19th. The yacht was sighted eight days later, but since that time all trace has been lost of her, and nothing has ever been heard of Mr. Foll and the crew.

William Dalla Husband, F.R.C.S., the leading surgeon in York, England, died in that city recently, in his seventy-sixth year, after a long and painful illness.

Dr. John Drysdale, one of the leading homœopathic physicians of London, died on August 20th.

Dr. Clarence O. Taylor, of this city, died on August 19th, of pulmonary hemorrhage. He was on his way to see a patient the evening before, when a profuse hæmoptysis came on, and it was found necessary to take him to the New York Hospital. Dr. Taylor was a graduate of the Bellevue Hospital Medical College in 1879, and was a member of both the New York County Medical Society and the New York County Medical Association.

The Tri-State Medical Society will hold its fourth annual meeting in Chattanooga on October 25, 26, and 27, 1892. The three States, from the citizens of which the membership of the Society is recruited, are Alabama, Georgia, and Tennessee. The secretary of the Society is Dr. Frank Trester Smith, of Chattanooga, to whom application for membership should be sent.

An International Congress of Criminal Anthropology was held in Brussels, under the patronage of the Belgian Government, August 7th to 14th. The President of the Congress was Dr. Lemal, director of the State Lunatic Asylum at Mons.

Sir Richard Owen, K.C.B., the well-known anatomist, is reported to be failing in strength, although free from any actual disease. His friends feel considerable anxiety about his condition, as he is eighty-eight years of age, and they fear his recuperative powers will prove insufficient to combat the decline of strength.

A Permanent Home for the British Medical Association.—At the annual dinner given during the recent meeting of this Association at Nottingham, Dr. Withers Moore, President of the Council, announced that the Council intended at no distant date to set aside the sum of £50,000 or £60,000 for the purchase of a site and the erection of suitable buildings in London, to serve as a permanent home for the Association.

Mr. Samuel Armstrong Lane, one of the founders and for many years surgeon of St. Mary's Hospital, London, died in that city recently at the age of ninety years. He retired from practice many years ago.

Professor Virchow has been elected Rector of the University of Berlin for 1892–93. The University would doubtless have been honored by this appointment many years ago, had it not been for the prejudice existing in certain circles against the eminent scientist for his well-known radical tendencies in politics.

The International Congress of Gynecology and Obstetrics will be held in Brussels, September 14–17, 1892. The subjects proposed for discussion are pelvic suppurations, extra-uterine pregnancy, and placenta prævia. The programme of entertainments is an attractive one, and comprises concerts, receptions, a gala night at the Opera, a banquet tendered by the Belgian Society of Gynecology and Obstetrics, and various excursions. All communications relative to the Congress should be addressed to the Secretary-General, Dr. Jacobs, 12 Rue des Petits-Carmes, Brussels, Belgium.

Dr. Valerian Podrowsotski, of Kazan, died there recently at the age of sixty-nine years. He was originally a lawyer, and did not receive his medical degree until he was fifty years old. He was Professor of Pharmacy and Pharmacognosis in the University of Kazan.

Small-pox in Boston.—A case of small-pox was recently discovered in the person of a Russian girl, in Boston. This is the first known case of the disease in that city in over two years.

Dr. Ignatz Roth, of Vienna, has recently died in that city. He was a member of the Dermatological Society, and was the author of several monographs relating to skin diseases and syphilis.

The Chicago Vegetarian Society had a celebration the other day, and feasted on cucumbers, cabbage, water melons, and other succulent products of the vegetable kingdom. One of the members defined the position of the society and declared that the eating of animal flesh was but one degree removed from cannibalism, and in many respects equally as revolting. "Meat," he said, "is the cause of more crime than alcohol, which is a vegetable substance. The eating of flesh makes men bloodthirsty and cruel, and for that reason is an offence. If no meat were eaten the world would be much further advanced in civilization, refinement, and culture than it is at present."

Hydrophobia in Massachusetts.—Some alarm has been aroused among timid people in Eastern Massachusetts by the published accounts of numerous cases of rabies, and the newspapers began to talk of an "epidemic of the dread disease." Most of the cases reported, however, were spurious, and the State Board of Health declares that there have been but a little over one hundred deaths from hydrophobia in Massachusetts in the last half-century.

Dr. J. M. Deaver died at his home near Lancaster, Pa., on August 22d, after an illness of five weeks. He was seventy years of age. He was a member of the Maryland and Pennsylvania State Medical Societies.

Glanders in London.—It is said that glanders has become almost epidemic among the horses in London, and the authorities are so alarmed at its spread that they have issued special instructions looking to the complete isolation of horses that are suspected of being infected with the disease, and the slaughter of every animal that is known to be suffering with it. Every horse in the city is being strictly watched, and even the public drinking-troughs have been closed to prevent the contagion spreading by this means. The latter action has called forth numerous protests from veterinary surgeons and others, who maintain that more harm will result to the horses from the deprivation of water during the hot weather than could possibly result from leaving the troughs open.

But drivers could carry pails in their wagons which could be filled from any hydrant, thus doing away with all danger of infection. The wife of a hostler has died from glanders, and several other cases of the disease have been found among the families of stablemen.

Hot Weather in Europe.—The cable brings report of unusually hot weather all over Europe, and many cases of sunstroke have occurred in the large cities, and among troops who have been forced to perform their ordinary evolutions under a mid-day sun.

Professor Da Costa has withdrawn from all teaching connection with the Jefferson Medical College of Philadelphia. Since he resigned from the Chair of Practice of Medicine, he has been holding clinical lectures at the College.

Dr. Joseph Colvis, a well-known American physician in Paris, died in that city a few days ago. Dr. Colvis was of African descent, and was born in New Orleans in 1831. At the age of eight years he left for France with his relatives, and was placed in the Lycée Bonaparte. Here he received the degrees of B.A. and B.S. He then studied medicine, and after serving for some years as interne in the Hôpital Saint-Louis, was graduated as doctor in medicine. He was repeatedly decorated by the French Government for public service rendered in the line of his profession, notably during the Franco-Prussian War, and a few years ago was awarded the Cross of the Legion of Honor. He never resigned his American citizenship.

Sisters in the Paris Hospitals.—A meeting was held recently in Paris, with the object of demanding the reinstallation of Sisters of Charity in the public hospitals. The opponents of the measure were present in force, and the meeting was a most tumultuous one, although the promoters of it succeeded in carrying their resolutions.

End of a Libel Suit.—The *Bosphore*, a newspaper of Cairo, has been condemned to pay $5,000 to Dr. Milton, an English physician in the native hospital. The journal had attacked the English physicians of Cairo most savagely, and was sued for libel by Dr. Milton.

Cure of Myxœdema.—Dr. Wallace Beatty, of Dublin, has reported a case of myxœdema cured by massage and the injection of the juice of the thyroid gland of a sheep.

The Registration of Prostitutes.—Authorities differ widely as to the benefit derived from the registration and examination of prostitutes. Only recently, at the meeting of the Public Health Section of the British Medical Association, Dr. Drysdale contended that syphilis was less prevalent in London, where no restrictions are put on prostitution, than in Paris. Yet statistics, as far as they prove anything, do certainly point to the value of registration in restricting the spread of venereal disease. The *British Medical Journal* states that among 2,941 registered prostitutes in Paris, arrested for various reasons in 1891, 251 were found to be suffering from venereal disease. Of 2,637 clandestine prostitutes arrested under similar circumstances, 1,153 were infected. The proportion of disease was therefore about 8½ per cent. among the registered women, as against 43 per cent. among the clandestine prostitutes. In Brussels, where the regulations are very strict, the proportion of disease is somewhat less among the registered women, but among the clandestine prostitutes it has recently increased to such an extent that an additional ward has had to be opened in the St. Pierre Hospital for their reception.

The Digestibility of Various Kinds of Cheese has been recently tested by a German chemist, who placed the samples in fresh gastric juice. Cheshire and Roquefort cheese took four hours to digest; Gorgonzola and Neufchatel, eight hours; and Brie and Swiss cheese, ten hours.

Longevity among Indians.—From a recent census report on the Six Nations in New York State, we learn that, among the 5,239 still remaining on the reservations, the enumerators found 6 persons over ninety years of age, 26 between eighty and ninety, 64 between seventy and eighty, and 173 between sixty and seventy years. The age of Governor Blacksnake, who died on the Alleghany reservation in 1859, was variously and extravagantly estimated at from one hundred and seventeen to one hundred and thirty years. There is no doubt, however, that he was over one hundred years old.

Greenbacks and Bacteria.—Drs. Acosta and Rossi report, in an Havana journal, the results of some bacteriological examinations of bank notes made by them. They examined two bills that had been in circulation for some time, and found them loaded with germs of various kinds and all degrees of malignancy. The two bills, which together weighed about a gram, say fifteen grains, contained, it was estimated, between nineteen and twenty thousand microbes. Cultures were made from the scrapings of the notes, and these were injected into the peritoneal cavity of rats and guinea-pigs, most of which died within twenty-four hours, the post-mortem examination showing signs of peritonitis and congestion of the liver and kidneys.

Electrocution.—In an article in the *Lyon Médical*, M. A. Lacassagne discusses at some length and quite intelligently the subject of execution by electricity. He thinks that it is not so sure a means of taking life as its advocates maintain, and quotes with approval the remark of d'Arsonval, that "the American physicians would not dare practise artificial respiration on their victims." He believes, however, that this mode of execution is of service, as it affords an opportunity to study the physiological mechanism of death by electricity, and gives hope of an early solution of the problem of fulguration, concerning which there is at the present day so much that is incomprehensible and apparently contradictory.

An Innuendo.—The circular announcing the forthcoming meeting of the Mississippi Valley Medical Association says, that the Society "possesses one great advantage over similar bodies, in that its organic law is such that nothing can be discussed during the sessions save and except science," and thus "precious time is not allowed the demagogue or the medical legislator."

Colored Morphine.—It has been proposed by a German physician that morphine be always stained a bright red with aniline, in order to diminish as far as possible mistakes in compounding.

Sir Lyon Playfair, the well-known chemist, has recently been raised to the peerage.

Society Reports.

BRITISH MEDICAL ASSOCIATION.

Sixtieth Annual Meeting, held at Nottingham, July 26, 27, 28, and 29, 1892

SECTION ON SURGERY.

FIRST DAY, WEDNESDAY, JULY 27TH.

The President's Address.—MR. JOHN CROFT, F.R.C.S., in taking the chair, expressed his high appreciation of the honor of presiding over the deliberations of the Section. He said that one special subject had been selected for discussion at each session of the Section.

Surgical Treatment of Pleural Effusions.—This was the subject for the first day. The surgical treatment of these affections had now advanced to such a point that certain formulæ were generally admitted: 1, That early evacuation is the best principle to act upon; 2, that the exclusion of air where practicable and the observance of aseptic or antiseptic *technique* should be rigidly observed; 3, that complete and perfect drainage of the cavity under treatment is essential, including counter-openings and large openings into the pleura or other pus-holding cavities; 4, that large cavities require adequately large openings; 5, that ribs and periosteum, intercostal vessels and nerves, may be largely excised with advantage immediate and prospective, so long as ordinary precautions are observed; 6, that lack of early and adequate operations are important causes, though not the exclusive causes, of delay in the closing of cavities; 7, that lung abscesses and gangrenes and bronchiectatic cavities, with certain obvious exceptions, are amenable to surgical exploration and treatment; 8, that hydatid cysts in the lung or pleura may be successfully extracted or otherwise cured by thoracotomy.

Among the causes that hinder success in surgery of the chest is the difficulty in many cases of exact diagnosis. Sometimes preventable procrastination delays surgical interference. Rigidity of the walls of the cavity makes healing difficult, and attempts to obviate this by removing large portions of the bony wall are not altogether successful. Mr. Croft asked whether it might not be justifiable to remove the collapsed lung (which he thought kept up the pleural discharge) by dividing it near the root, in cases where it was spoilt as an organ.

Surgery of the Liver and Gall-Bladder.—The speaker then referred to the achievements of surgery in this department, which would be the subject for discussion the second day. There were questions still unsettled, such as the treatment of hydatids of the liver that had opened or were likely to open into the chest; the question of early operation in cholelithiasis; the desirability of suture of the gall-bladder and closure of the wound; the treatment of gall-stone when impacted in the duct and not to be got at from the bladder; and finally, the question of ligature of the duct and of cholecystectomy.

The Treatment of Spinal Abscess would be the third subject to be discussed by the Section, and much good might be hoped to result from the consideration of the different modern methods of treatment.

Surgery of the Thorax.—MR. RICKMAN GODLEE opened the discussion. In cases of empyema he had found that the best place to incise the pleura was over the ninth rib behind, just in front of the lower angle of the scapula. This was the last point to heal in empyema. He had often formerly had to supplement an anterior incision by one in this situation; but since he had adopted the posterior incision he had never had to open the pleura elsewhere. He practised excision of a portion of rib as a routine procedure. It allowed free exploration and evacuation, and the drainage-tube was easily retained. It was, however, sometimes needless, as the event proved, but it was impossible to foretell this, and although it slightly prolonged the operation, it did no harm to the patient. If the chest were very full and fears were entertained as to the effect of an anæsthetic, he performed a preliminary aspiration before administering any anæsthetic. In some cases it was advisable to divide and tie the intercostal artery before removing the portion of rib. He advocated the use of a short flanged red rubber drainage-tube of large size, but only just long enough to reach the cavity of the pleura. This should never be shortened, but maintained of the same length until it was removed altogether. The question arose as to how to end a case. The time of removal of the tube would depend on the amount and nature of the discharge. In simple cases he would remove the tube in children after ten days, and in adults after three weeks or more, provided the discharge had become serous.

In operating on a bad case he preferred to place the patient on the sound side on the edge of the table, but if the chest were very full he laid the patient on the diseased side. For simple aspiration no anæsthetic need be given, while for incision slight chloroform anæsthesia was to be preferred, lasting only until the incision and resection were performed. He thought that when the chest was very full, ether was counter-indicated. Double empyema was not very rare in his experience. When of septic origin it was often localized and acute, and it might be necessary to relieve symptoms by operating on both sides at one sitting; otherwise he thought it better to defer the second operation until the patient had become used to the new order of things on the side first operated on. Tubercular disease of the pleura must be treated with great caution. Operations were seldom advantageous, and often fatal. Aspiration and irrigation should be performed by means of two needles, through one of which the morbid fluid should be evacuated, while an antiseptic solution or warm boiled water should be gently injected through the other. In pneumothorax the air should be removed by aspiration. His experience led him to believe that empyema was more often fatal than was generally thought. Shock was sometimes severe after incision, probably due in many cases to hemorrhage into the pleura, which was often more copious than was supposed, and was, he believed, due to yielding of vessels owing to sudden diminution of pressure, just as hemorrhage sometimes occurred into the cavity of an abscess.

Amyloid disease and clubbing of the finger-ends was not so very common with empyema. The speaker had often known these symptoms to disappear after drainage of the chest. It was also remarkable that discharge might continue for years without amyloid disease of the liver and kidneys resulting. He had had one very marked case of lardaceous disease with albuminuria and enlargement of the liver in which, after incision and drainage, the albumin disappeared from the urine and the liver shrunk beneath the ribs.

Abscess of the Lung.—Most of the cases of pulmonary abscess that were brought to him, he said, were bronchiectatic. He had operated on many. One case which was cured died afterward from other causes, and inspection proved the nature of the disease and its cure. The results on the whole were not good. The patients generally improved for a time after incision and drainage, but finally die. The danger of simple puncture was that septic pleurisy might be set up. On making the incision the pleura might be found healthy and non adherent, and when this was opened the lung might fall away out of reach. These dangers were to be prevented by using a needle connected with a good vacuum for simple puncture, and by sewing the lung and pleura to the chest-wall with a full-curved needle before the pleura was opened.

Among cases showing the occasional difficulty of diagnosis, Mr. Godlee referred to one of left empyema and purulent expectorations which was incised, with a fatal end. On inspection, pus in the pericardium and bronchiectasis were discovered. Had these conditions been diagnosed, they might have been treated by drainage from the pleura. In uncomplicated pyo-pericardium he would

tap at the left fifth interspace near the sternum, having, however, regard to the position of the internal mammary artery, and to that of the pleuræ, which, unlike the lungs, are here symmetrical on the two sides.

Mr. Pearce Gould supported Mr. Godlee in his preference for the posterior opening of the pleura at the ninth rib. He considered that removal of a portion of rib should be a routine practice, but, of course, it had nothing to do with the closure of the cavity afterward. He generally irrigated the chest in empyema, at the time of operation, by a very gentle washing out through a small tube, taking care to allow free exit from the wound so that no pressure was caused in the chest. The reservoir should only be raised one or one and one-half feet. He afterward swabbed out the pleura as thoroughly as possible and removed fibrinous and other matters. If the discharge was afterward putrid he repeated the washing out as often as necessary, otherwise he would not do so. He agreed with Mr. Godlee as to the use of a short tube, but a tube that just reached the cavity at first would often, after a few weeks, be too short, and must be replaced by a longer one. He employed a rigid tube for the first few days to dilate the wound. As an anæsthetic he used chloroform, but as little as possible, especially after the skin incision was complete. He agreed with what Mr. Godlee had said as to opening in cases of double empyema, but no unnecessary interval between the two operations should be permitted; a few days was enough. He thought the distinction between local and general empyema was mainly artificial. In all cases of empyema there were some adhesions.

Dr. Newman, of Stamford, speaking of the dangers of irrigation, referred to the case of a medical man who was subjected to frequent washing out of the pleura, and on the seventh occasion died immediately on the introduction of fluid, death being, he thought, due to shock from the impact of the fluid against the pericardium. The post-mortem examination in this case showed the efficient drainage obtained through the posterior incision. Speaking of diagnosis, he said that auscultation was misleading. Breath-sounds might be heard on the affected side when no air entered that lung. Possibly this was due to conduction by the fluid.

Mr. Jordan Lloyd, of Birmingham, said that the practical conclusion he had come to from experience was that the position of the opening and the kind of tube used in empyema cases were not so important. It was, however, most important that the surgeon should know whether the disease was simple (generally acute) or constitutional (generally chronic). The first mentioned commonly ended in cure, the second was rarely cured in children and never in adults. Early diagnosis in pleural effusion was most important. An exploration with a clean hypodermic syringe should be made whenever there was dulness and loss of vocal fremitus on one side of the chest. Auscultation was of little value. He thought the incision in the mid-axillary line on a level with the nipple as good or better than any, whatever might theoretically be the most dependent part of the pleura. Patients generally lay on the diseased side instead of on the back, and hence incision in this situation favored drainage. He preferred a three-and-one-half-inch incision through the soft parts and pleura to a rib resection. What was wanted was room, and it mattered not whether space was gained in a longitudinal or in a transverse direction.

Mr. Charters Symonds, of London, had found free incision generally enough without resection of the rib. He preferred the posterior incision. If the aperture would not admit the finger he removed a portion of a rib. As an anæsthetic he preferred chloroform. If the heart symptoms indicated it he aspirated before operating with the knife. He thought irrigation needless, and that the masses and shreds of lymph did no harm and should be left alone. In a case of double empyema he would open one pleura and aspirate the other. He would ask Mr. Godlee to say how he would treat abscess of the lung when the pleura was not adherent. His experience was that the lung with apparently non-adherent parietal pleura did not collapse on opening the latter.

Mr. Ward Cousins, of Portsmouth, referring to the treatment of empyema complicated with tubercle, said that well-marked tubercle should be left alone if possible. When, however, the fluid was very copious, interference was needed. Localized tubercular empyema was best left alone. Spontaneous opening of a localized empyema through the lung was by no means an unfavorable occurrence. He only irrigated in cases of fetid discharge. He had found simple aspiration to be usually curative in children, incision and rib resection being seldom necessary. In tapping the pericardium care must be taken not to wound the heart, and this was best avoided by the use of a guarded trocar of small calibre, and by not completely emptying the sac at once.

Dr. Eastes, of Folkestone, spoke of the difficulty of diagnosing the situation of subdiaphragmatic abscess, which might be mistaken for pleural effusion. The effect of deep inspiration on the lower limit of resonance was a valuable sign. When pleurisy coexisted, as it sometimes did, it much confused matters. He had found oxygen combined with the anæsthetic of use in bad cases.

Mr. Mayo Robson, of Leeds, said that he preferred the posterior incision and the short drainage-tube. He used cocaine locally instead of a general anæsthetic, when the latter would be dangerous, as in cases complicated by pneumonia of the opposite side. As a rule he did not resect the rib, for this needlessly prolonged the operation. Washing out the cavity he thought was needless, even in very fetid cases, as he found that the discharge soon became sweet spontaneously after incision and drainage. If it were foul afterward he thought very gentle irrigation sometimes useful. In old cases with rigid walls he practised excision of the ribs. In one case he had removed portions of eight ribs, including an inch and a half of the second rib, with a good result. He had done repeated aspiration of the pericardium for large quantities of bloody fluid with success. He would ask why the success attending drainage of the peritoneum in tubercular peritonitis should not be repeated in the pleura by drainage from its most dependent part?

Mr. J. R. Ratcliffe, of Burnley, said that operations sometimes failed through neglect of the fact that the lower limit of the pleural cavity is not the same in empyema as in health, owing to closure of the lower part of the cavity by adhesion of the diaphragm, which sometimes extended as high as the seventh rib. Hence, if incision were made at the eighth rib the matter was not found. In one case he had known an incision to be made through the chest-wall and the adherent diaphragm into the spleen. The syringe should always be used as a guide, and when the effusion was found, the needle should not be withdrawn, but the knife should be passed down beside it until the matter was reached.

Mr. Rickman Godlee, in replying, quoted his colleague, Dr. Douglas Powell, as saying, "when you think you have to deal with an empyema, pocket your stethoscope." He did not think that Mr. Robson's proposal to drain the pleura in tubercular disease was a good one. Suppuration would result in spite of antiseptic precautions. He believed the distinction between local and general empyema was important because of the constitutional effects. He approved, in certain cases, of swabbing out the cavity, but not of repeated irrigation. He thought that when the patient's condition was so serious as to forbid general anæsthesia, cocaine would be equally dangerous. If the chest were so full that anæsthesia was likely to be dangerous, a preliminary aspiration was the best proceeding.

Injury of the Pancreas.—Mr. Jordan Lloyd then read a paper on "Injury to the Pancreas as a Cause of Effusion into the Lesser Sac of the Peritoneum."

The speaker said that the relation of pancreatic cysts

to the lesser cavity of the peritoneum had hitherto attracted little notice, but he believed that many of these cases were due to gangrene of the pancreas and effusion into the lesser sac.

Mr. Lloyd related two cases which had come under his observation, and referred to two other similar ones already published. In these cases there was dulness on the left side and back over the four lower ribs, due to displacement upward of the diaphragm; consequently there was some danger of a mistake in diagnosis, leading to thoracentesis being done for suspected pleuritic effusion.

The following were the speaker's conclusions: 1. That injury may cause such tumors. 2. They are due to the presence of fluid in the lesser sac of the peritoneum. 3. When this fluid is found to possess dialytic properties we may assume that the pancreas is injured. 4. They are not consequently retentive cysts. 5. Diagnosis is possible from the history and symptoms and position and shape of the swelling. 6. Treatment should be by median abdominal incision and drainage.

Cancer of the Rectum.—Mr. Harrison Cripps then read a paper on "Rectal Excisions for Cancer and the Selection of Suitable Cases, and Prognosis." He said that any attempt to make excision the common treatment of cancer on this part would only bring discredit on the operation. In only a few carefully selected cases was operation feasible. Severe operations extending high up were justifiable only when there was a fair chance of completely removing the disease. After partial excisions the remaining morbid growth increased more rapidly than ever. All rectal cancer was glandular carcinoma. The younger the patient the earlier were other organs involved. In examining the patients no anæsthetic was, as a rule, needed. In doubtful cases, however, ether might be given and a more thorough examination be thus made possible. The speculum was of no practical diagnostic value. Cases in which there was a tight stricture with prolapse from above were not favorable for operation. In such cases the finger might be passed into the cul-de-sac on one side and lead to the belief that it had passed the growth, which might be thought not to extend all round the bowel. When the growth was fixed operation was unadvisable.

Favorable cases were those in which the surface of the diseased portion resembled an ulcer and did not extend entirely around the gut, those in which the upper border of the growth could be defined and healthy mucous membrane felt above it, and finally, those cases in which the neoplasm was freely movable, both laterally and vertically. Most cases would come with one or other of these categories. Of four hundred cases which the speaker had seen he had advised against operation in one half. In thirty-eight he had operated by excision and in seventy-six by colotomy; the remainder refused to submit to any operation. He had been able to trace the subsequent course of twenty-eight of these operated cases. In fifteen recurrence was known to have taken place—in one year in ten cases, and between one and three years in five cases one case died without recurrence, and in eleven none had as yet occurred, although one of these was operated on twelve years and several of them three years ago. After operation stricture was likely to occur during the first and second year and was often troublesome, but if properly treated the tendency gradually disappeared. One patient, in which the recto-vaginal septum was involved, had since given birth to a healthy child and had as yet had no recurrence. Contraction was apt to occur after the fourth week. A bougie should be passed and kept in for some hours daily after the first fourteen days. This should be continued for two months, and after that the bougie might be passed at intervals. The mortality, rate of the operation was less than eight per cent., and the result was hopeful in selected cases.

Dr Snow said that severe operations involving resection of the sacrum were not to be recommended, but he thought that some cases were passed over as unfit for operation which might be treated by incision behind and removal or displacement of the coccyx, and by pulling down the bowel and dividing it with the galvanic écraseur. The sacrum should not be removed merely to provide access to the tumor.

Ligature of the Common Carotid and Subclavian Arteries.—Dr. C. H. Marriott read notes of a successful case of ligature of the common carotid and subclavian arteries for aneurism of the innominate artery the size of a mandarin orange, and showed the patient. The wounds healed well. Silk ligatures were used and cut short; no improvement occurred until six months after ligature. A year after, the tumor was not visible but could be felt and was about as large as a walnut. This was about the condition now, two years and four months after operation.

Second Day, Thursday, July 28th.

A Discussion on the Surgery of the Liver and Gall-bladder was opened by Mr Mayo Robson and continued by Mr. Lawson Tait, who gave statistics of his operations on the liver, one hundred and ten in all. Twenty-one of these were exploratory incisions, eighteen hepatotomies, and seventy-one cholecystotomies. Of the cases of exploratory incision four died; of the hepatotomies, eleven were for hydatid disease, one only of which died; three were for cysts of other nature, two were for gall stones, and one for tumor, all of which recovered, and one for abscess, which ended fatally. Of the seventy-one cases of cholecystotomy only four died, besides one which died from malignant disease five weeks after operation, and one case of cancer of the liver, which died on the nineteenth day. Mr. Tait objected to removal of the gall-bladder, and thought that removal of the urinary bladder would not be less justifiable.

Mr. R. C. Chicken said that free incision was the adequate treatment of liver abscess. Such abscesses were not easily cleared out by aspirator, for they were largely traversed by trabeculæ, in which the matter was entangled. These could be broken down after free incision. Operation was often to be advised for the temporary relief of symptoms when cure was beyond hope.

The President regretted that physicians did not call in the surgeon earlier in these cases.

Dr. George Harley appealed for more facts and information. The data before the surgeon were very different to the data before the physician; the latter saw perhaps twenty cases to one seen by the former, and most of these twenty cases would be curable. He was surprised to find that any surgeon expected jaundice to be present when there was a stone in the gall bladder. He had thought that that heresy was extinct long ago. Jaundice from gall-stone occurred only when the stone was in the hepatic or common duct. The gall-bladder seemed to be an unnecessary luxury, for many animals, as the horse and the deer, had none, whereas all the higher animals except the birds had urinary bladders. The analogy suggested by Mr. Tait was not a true one. He said that he had evidence to show that hepatic cancer was often due to irritations caused by gall stones, and related a case in point.

Hydatids of the Liver.—Mr. Bruce Clarke, of London, read a paper on "Hydatids of the Liver," in which he advocated complete removal of the cyst-wall, although adhesions often caused difficulty in doing this when the cysts were situated on the periphery of the organ. It was better to operate early, before adhesions occurred. If complete removal were impossible a drain should be inserted, and kept in until the remains of the cyst-wall came away.

Actinomycosis of the Liver.—Mr. Frederick Eve, of London, speaking of actinomycosis of the liver, said that operations hitherto had all been unsuccessful. Diagnosis was often difficult, and the clumps of ray fungus might be searched for again and again in the discharge

from a sinus with negative results. He described cases of loculated abscess of the liver, presenting to the naked eye exactly the appearance of actinomycosis, which however, the microscope proved to be of different character. He would suggest that certain obscure tumors of the liver, which disappear after incision, might be nævoid. He had seen a case in the post-mortem room, supposed during life to be one of cancer, where the whole of the left lobe was replaced by a nævus. Such cases might end in spontaneous cure.

Mr. Mayo Robson said that he preferred the use of a large drainage-tube to suture of the duct, which it is very difficult to do securely. He had no experience of actinomycosis. He was certain that his cases were not nævi, on account of their cartilage-like hardness. He disapproved of removal of the gall-bladder as a routine practice, but it was necessary in some cases.

Surgical Treatment of Goitre.—Mr. Charters Symonds read a review of thirty-three cases in which this affection had been treated surgically. He said that all unilateral and median goitres were encapsuled tumors, and could be removed without interfering with the gland itself. He had always operated in the middle line. These tumors were generally (16 in 23) solid, and not amenable to treatment by injection. Solid tumors were softer than cysts, which were generally tense; if the case prove on incision to be one of cyst, this should be opened and dissected out; a solid tumor should be removed. The wall of a cyst was white and thick, especially if of long standing, while the wall of a solid tumor was purple and thin. Severe hemorrhage might happen in removing a solid growth. The plan he followed was to remove the tumor rapidly with the fingers, stop the bleeding by plugging or sponges, and then ligature the vessels at leisure. One of the growths operated on was bilateral, but was easily removed through a median incision. Such a tumor did not much resemble parenchymatous enlargement. He did not approve of injection of cysts with iodine or other substance. There was generally some solid growth, and suppuration was very apt to follow. When the tumor was solid throughout, injection caused too severe inflammation. In some cases, also, calcareous plates were encountered.

For parenchymatous goitre, resection of the isthmus was favorable only in soft, compressible, non-pulsating tumors. In one case of great dyspnœa isthmotomy did no good, but removal of one lobe was completely successful. In pulsating goitre, resecting of one lobe had an excellent effect. The nervous and other symptoms disappeared, the remaining lobe shrunk, and the exophthalmos had gone. He had removed as many as five encysted tumors from one lobe, leaving torn remains of gland-tissue. In nearly all cases primary union occurred, and healing was complete in about ten days.

Mr. Butlin, of London, had had good results from injection of perchloride of iron, which was meant to cause suppuration. The length of time required was the chief drawback to this treatment.

Mr. Lund, of Manchester, said that in a case of great dyspnœa he had divided the isthmus, and saw the displaced and twisted trachea at once right itself, with complete relief. Considerable wasting followed in both lobes. He had used iron and also iodine injections.

Mr. Bush, of Bristol, had seen severe bleeding follow tapping before injection, in three cases. One of these was nearly fatal. He was disappointed with the results of division of the isthmus. It did not always relieve the dyspnœa.

Mr. Mayo Robson had done a temporary tracheotomy as a preliminary to operation, where great dyspnœa existed. After the operation was performed he had sutured the tracheal wound, and could then irrigate the wound freely and dress it. He objected to injection, cases of which he had known to end fatally. In one case of tumor he had had to remove the entire lobe in order to check the bleeding. Section of the isthmus was, as in Mr. Symonds's case, not always enough, and might have to be supplemented by removal of a lobe. He preferred to ligature arteries first, then free the lobe, and lastly to divide the isthmus.

Intestinal Anastomosis.—Mr. Mayo Robson then read a paper on a new method of performing intestinal anastomosis. After speaking of Senn's method as a valuable and now recognized surgical procedure, he said that it had certain drawbacks. He claimed for his own method simplicity and ease in use, and that it did not leave large plates of bone to be absorbed. He used a tube of decalcified bone shaped like an ordinary cotton-reel. Two continuous sutures were used, the one through the margins of the openings of the two portions of gut, the other only through the serous coat at some distance from the edge. The sutures were first passed, the bone tube was next placed in position, and the sutures were tightened. In a case of gastro-enterostomy in which he had used this method, a post-mortem examination showed union to be perfect and the orifice smooth. He had performed a short circuiting operation by this method in seventeen and a half minutes.

Dr. G. H. Hume read notes of a case of enterostomy for cancer of the pylorus. The operation was quite successful. The patient afterward died of cancer. Senn's plates had disappeared, but the silk sutures still remained inside the gut. This was a possible danger.

Mr. Robson said that he hoped some day we should be able to do without plates or tubes. He had done so twice, but in one case stricture followed from the scar. He agreed with what Dr. Hume had said as to the objection to sutures that pierced the bowel-wall.

Third Day, Friday, July 29th.

Treatment of Spinal Abscess.—Mr. Watson Cheyne, of London, opened the discussion on this subject. He said that there was no greater proof of the progress in surgery due to Lister than the advances made in the last two years in the treatment of spinal abscess. He would divide the history of treatment into three periods: the pre-antiseptic, the early antiseptic, and the present antiseptic period. The results of treatment in the first period were decomposition after rupture or incision, sepsis and death, or hectic fever and lardaceous disease. Rest was the best treatment at that time, in the hope that absorption might take place. It was difficult to tell how often abscess was absorbed. Lannelongue held that this often happened, as shown by necropsy, but the speaker thought that the cheesy material which was taken to represent old abscess was often only degenerative tubercle. Late in the first period, aspiration or valvular incision gave better results. In the early antiseptic days the pathology of chronic abscess was thought to be the same as that of acute suppuration. Drainage with antiseptic precautions was therefore advocated. In 1888 Mr. Cheyne collected 58 cases thus treated, of which 49 remained aseptic; of these 38 were cured, 6 were still under treatment, and 5 died of tuberculosis.

The objections to this method were the length of time the treatment required, and the fact that the tuberculous material was left behind. Repeated aspiration before incision was then advocated, and the best time to open was also discussed. The general conclusion was that abscess should be opened as soon as possible, and as to situation, it was more important to keep away from sources of infection such as the perineum, than that the opening should be at the most dependent part.

At the present time it is known that the pathology of chronic abscess is not the same as that of acute. These abscesses are really tubercular tumors containing pus, and, therefore, simple drainage is not a radical method of dealing with them. The first attempt to deal with the tuberculous material was by applying an antiseptic to the walls of the abscess by the injection of iodoform in glycerine, or ether. Sinus generally resulted, and some

deaths were recorded. In one case under the care of Mr. Stanley Boyd, after injection of two drachms of a ten per cent. solution of carbolic acid, collapse, vomiting, carboluria, and death occurred. We now saw that the wall must be dealt with by scraping, and this method the speaker had used for the last four years. An incision should be made large enough to admit the finger, and the Volkemann or Barker spoon should be used; but where the peritoneum or large vessels formed part of the wall, rough sponges should be substituted for the spoon. Irrigation should be continued during the process. One or two ounces of iodoform emulsion might be injected and the wound closed by sutures.

In 24 cases of lumbar and psoas abscess thus treated, 13 healed by first intention, but 2 afterward returned with sinus. In 7 cases a small sinus remained in one part, of which 4 were operated upon a second time successfully. Nineteen cases out of the 24 were either cured at once or after a second operation. Three cases ended in death from pneumonia and other causes, and one child of two years died in collapse. In this case no iodoform was used. Post mortem nothing was found to account for death, which might perhaps have been due to fat embolism or injury to the sympathetic. The method was not absolutely safe, but the risk was worth running. Excision of the sac of the abscess entire was only possible when the laminæ were affected. When psoas abscess was confined to the abdomen it might be treated by lumbar incision, when in the groin by incision near the anterior superior iliac spine. In lumbar abscess the sac should be excised, the canal leading to the bones stretched, and the vertebræ scraped as far as possible. For irrigation he used a 1 in 10,000 solution of corrosive sublimate. It was difficult to decide whether iodoform injection was necessary or desirable. Unless iodoform would destroy the bacilli or stop their growth, it was of no use. Practically he found that, although some cases did well without it, iodoform was useful, and that the glycerine emulsion was better than ethereal solution, which was apt to cause sloughing.

Mr. C. B. Keetley, of London, thought that in carrying out the Listerian treatment it was not necessary to keep the patients in bed so long as was generally done. With a large, firm dressing applied on the principles advocated by the late Sampson Gamgee and a Sayre jacket, it was not necessary to keep a patient more than three or four weeks in bed. He thought that iodoform had probably nothing to do with death in Mr. Boyd's case, and referred to Mr. Cheyne's fatal case, where no iodoform was used.

As to sinuses and residual abscesses, he thought the last no reflection on the treatment. They might happen in any tubercular case long after operation, but were not serious. Spinal abscesses had a superficial and a deep portion. No thorough scraping was possible in the latter. He thought the lumbar incision was not of much use.

Mr. Noble Smith had had good results by incision and frequent syringing out with a one per cent. carbolic acid solution, without antiseptic dressing. He laid stress on the importance of absolute rest in these cases.

Mr. Charters Symonds would go so far as to say that no treatment was justifiable except incision and scraping. Rapidity of cure was one great advantage of the method, but the operation was a very tedious one. He was doubtful as to the value of iodoform.

Mr. Jordan Lloyd thought that the principles stated by Mr. Cheyne were the true ones. Of course we all presupposed fixation of the spine in these cases. Dissecting out a tubercular abscess was surprisingly easy, using the handle instead of the blade of the knife, but in spinal abscess this could not often be done, and even scraping of deeper parts was not always possible. He thought iodoform was distinctly useful.

Laminectomy.—In the absence of Mr. W. Arbuthnot Lane, his paper on the later results of laminectomy was summarized by Mr. Eve as secretary. Eleven cases were operated on, with one death immediately after operation and one from bleeding from a rectal polypus. Three other deaths occurred from causes unconnected with the operation.

He advised operation in all cases of pressure paralysis, if a short period of recumbency did not effect improvement. The operation was not dangerous, despite the enfeebled condition of the patients.

Mr. Cheyne said that he was surprised to hear from Mr. Keetley that he allowed his cases to get about so soon. He thought it not free from risk, as fixation was necessarily imperfect.

As to Mr. Noble Smith's remarks, there was little to be said. He must confess that he did not understand his method or his results. It was, of course, absurd to suppose that he (the speaker) did not use fixation. He always employed it very thoroughly, with double extension in most cases. Mr. Smith had admitted to him that he had had some fatal cases.

Enlarged Prostate.—Mr. Reginald Harrison read a paper on the "Restoration of the Lost Function of Micturition," and referred to a paper read by him at the meeting of the International Medical Congress at Copenhagen, on the treatment of enlargement of the prostate by stretching, incision, or partial excision, with drainage through the perineum.

The results of thirty-five cases were restoration of micturition in ten, besides the immediate relief of obstruction. By tunnelling the prostate in an old man of eighty-five, micturition was restored, the gland shrunk, and the patient remained well until his death, at the age of ninety. Restoration of micturition after prostatotomy or prostatectomy, was frequent even in patients who had been dependent on the catheter for years, and these cases, if left alone, were generally fatal. Operation was, however, not always called for, but only when relief by catheter was inadequate or impossible. In the earlier stages of enlargement, medical treatment was of more avail than was supposed. The long use of ergot, alone or combined with cantharides and nux vomica, often improved or restored the function of the bladder-muscle. The speaker maintained that the functions of the prostate were largely urinary, and not genital only. He related a case in which he divided the bar of prostatic tissue that blocked the passage. The cut ends retracted, showing that fibrous degeneration had taken place. This patient never used the catheter after the operation.

The President said that he thought the effect of operation was largely due to the rest given to the parts, which allowed inflammation to subside and its products to be absorbed, as well as to the actual removal of obstruction. Diet was most important in these cases.

Dr. Beverley read notes of a case of stone in a man aged seventy-eight. Two stones, weighing respectively three hundred and thirty-seven and two hundred and twenty-five grains, were removed by supra-pubic lithotomy, with a good recovery.

Mr. Charters Symonds thought, after hearing Mr. Harrison's paper, that perineal prostatectomy was much better than supra-pubic.

Dr. Hingston, of Montreal, said that after a full experience of supra-pubic and other operations, he concluded that the old lateral perineal operation was the best. Much larger stones could be removed by this method than the advocates of the supra-pubic method would have us believe. A stone weighing five ounces and five drachms had been safely removed through the perineum by the lateral incision. He thought that lithotrity should be the rule, except in very young children or very old men.

Ulcers of the Leg.—Dr Sidney Gramshaw read a paper on the treatment of chronic ulcers of the leg by a new method. In old varicose ulcers, Martin's rubber bandage was sometimes useful, but often failed, and it had the disadvantage of leaving the skin tender. The

speaker's method was to cleanse the ulcer by hot water gruel applied personally for half an hour, and to make the patient repeat this frequently for three days. He then applied a solution of one drachm of nitrate of silver in four ounces of flexible collodion. This must be kept in the dark, and painted over the surface of the ulcer, and for one-third of an inch beyond. A piece of lint cut to the shape of the ulcer, but a little larger, should then be smeared with an ointment consisting of one part of prepared chalk to seven of spermaceti ointment. The gruel should still be applied and the ointment renewed daily. Cure generally resulted in one month. He had only had one failure. In very bad cases it might be necessary to repeat the application of the caustic, or to use a stronger solution to begin with.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, February 10, 1892.

H. P. Loomis, M.D., President.

Old Gunshot Wound of the Hip.—Dr. Lewis A. Sayre presented a specimen from a case of the above.

The patient, General B——, came to him on January 6, 1864, stating that he had received a gunshot wound in the region of the hip, two years before, and that his case was considered hopeless. The patient was tall, thin, and anæmic, but remarkably well built. Examination showed just above Poupart's ligament on the left side, and just inside of the anterior superior spinous process of the ilium, an opening through which considerable pus was discharging. The probe not being long enough, a metallic flexible bougie was introduced into this sinus until it detected dead bone. Just then the end of the bougie sunk into a fissure in the ilium, and not being able to withdraw it easily, it was pushed forward until the end of the bougie could be felt below the posterior superior spine of the ilium, when it was cut down upon, and the end made to protrude. A large quantity of pus escaped from this new opening. There was a cicatrix near this wound, which the patient stated was from an old abscess which had dried up some months before. An eye was made in this protruding end of the bougie, and it was then threaded with oakum saturated with balsam of Peru, and then it was drawn through the entire canal, thus establishing free drainage. Although this was before the days of antiseptic surgery, this combination of oakum and balsam was really an excellent antiseptic dressing. It was the intention of the operator to pull fresh oakum through every day, cutting off the soiled portion, and he hoped after a while to be able to heal up the sinuses by a thorough scraping. On the following morning, Dr. Sayre was summoned in great haste to the patient, whom he found suffering great pain. Inquiry showed that the patient had been in such a hurry to get well that he had undertaken to carry out this treatment himself, by twisting on some fresh oakum. He had then forcibly pulled it through, and in doing so, had broken off large pieces of bone, one of which was pressing into the buttock. By a star-shaped incision, and the use of strong forceps, several large pieces of the ilium were removed, the largest of which was an irregular triangle, one inch long, and measuring more than half an inch at its base. This piece was from the wing of the ilium, and showed the external and internal plates, but was, like the other, entirely devoid of periosteum. That evening, the patient left the city for Washington. He returned on September 4, 1865, and called at intervals of a few months, in order to have the drainage kept free. The patient would not consent to giving up his work long enough to enable the parts to be thoroughly curetted. In June, 1874, he came from Chicago in very bad health, as a result of obstruction of the drainage. The wound was enlarged, and a number of small pieces of bone removed, which so straightened the canal as to admit of passing a large perforated drainage tube. For the last two or three years, the drainage had been better and the discharge scanty. He took cold quite recently, and died on January 29, 1892, in the sixtieth year of his age. By the kindness of the attending physicians, Drs. Shrady and Carleton, he had been invited to be present at the autopsy, and the family had permitted the removal of the specimen, which he now presented to the Society before sending it to the Army Medical Museum. On opening the abdomen some ounces of embalming fluid escaped, but there was no effusion or evidence of recent peritoneal inflammation. The sigmoid flexure of the bowel was firmly united to the peritoneum in the iliac fossa by old adhesions. An incision was made through the left lumbar region at the sacro-iliac junction, and the limb entirely removed with part of the intestine attached, and with the india rubber tubes still in the sinuses. On cutting open the intestine, it was found that there had never been any injury to its internal or mucous coat, and that the whole mass was firmly adherent to the ilium of the place where the ball first entered that bone. All the sinuses were healthy except about one inch of their course through the bone, and this diseased tissue could have been easily removed by scraping, and the wound perfectly closed without danger. The entire portion of the ilium removed at his first operation had been more than replaced by perfectly healthy bone, which was nearly two inches in thickness in many places.

Dr. Sayre then read two letters, one from a postmaster in Ohio, describing a very similar case, and the other, from Dr. D. P. Chamberlain, the army surgeon who saw General Barnum about twenty minutes after he was shot. He wrote that from a hasty examination, made at the time, he stated that he did not believe there was any immediate danger, notwithstanding the location of the wound, and he based this opinion on the fact that the wounded officer lacked the shock and the peculiar leaden countenance indicative of intestinal perforation. Dr. Sayre said he wished to call particular attention to this statement, as he believed it contained an important aid to a correct prognosis in this class of cases.

Dysenteric Ulcers.—Dr. C. G. Currier presented specimens that had been removed from a patient fifty-eight years of age, and were chiefly interesting on account of the number of these ulcers, which, together with the capillary hemorrhages, were found scattered over the colon. The spleen from this patient was also interesting, as at first glance it might be taken for a tuberculous spleen, but closer inspection showed that there was only a thickening of the capsule from a perisplenitis. The heart showed hypertrophy, and the aorta was the seat of atheromatous changes.

A Needle in the Abdominal Cavity.—Dr. George P. Biggs presented an interesting specimen of a foreign body in the abdominal cavity. It was removed from a woman sixty years of age, who died of pulmonary tuberculosis without any symptoms bearing upon the foreign body. Aside from the lesions of the tuberculosis, the autopsy showed nothing of interest except a needle, located transversely in Douglas's cul-de sac. It was 6½ ctm. in length, and 1½ mm. in diameter, and was entirely covered by fibrous adhesions, which practically shut it off from the general abdominal cavity. Only a part of the eye of the needle was left. There was no evidence of any operation having been performed, and there was no uterine disease present. Whether the needle had found its way to this locality from the intestinal canal, or whether it might have been the result of an attempt at abortion, he was unable to say.

Diabetes.—Dr. J. S. Thacher exhibited a specimen illustrating a peculiar condition of the blood occasionally associated with diabetes. One or two writers had spoken of this as not being very uncommon, but he had never met with it before, and in a series of thirty-seven cases reported at the London Hospital it was not found, and in forty-three cases at Guy's Hospital it was only noted twice. Some observers have thought it was produced by

a sudden transformation, shortly before death, of the excess of sugar into fat, while others have believed it to be caused by acetone in the urine. Still others have claimed that it is not fat, and that the result follows mixing acetone with urine; but the weight of evidence is in favor of its being fat. A microscopical examination of the blood just presented showed it to be crowded with minute granules, smaller than the smallest micrococci, but on mixing the blood with ether an emulsion was obtained, which presented under the microscope an appearance similar to that of milk. He had also extracted this substance from the blood with ether, and after the evaporation of the ether there was a greasy residue. It had been suggested that the attacks of coma with impeded respiration, such as we occasionally notice in connection with diabetes, are due to the formation of fat emboli in the lungs, but the evidence seems to point to a different etiology.

This specimen of blood was removed from a girl about fifteen years of age, in the service of Dr. Beverley Robinson at St. Luke's Hospital. About four or five months before her death she began to lose flesh and strength, and to suffer from great thirst. During the three months she was in the hospital the urine contained no albumin, and the daily average of sugar was from four to six per cent., or from two hundred to two hundred and seventy ounces. She gained in weight slightly immediately after admission, but afterward lost flesh steadily. The day before her death she was up and around the ward; about ten hours before death she was found to be cold, and suffering from labored breathing, and three hours later, after a dose of morphine, she was found asleep, with a pulse of 130, and respirations 16 and very deep. About six hours before death she was seized with a tonic spasm, which lasted for about ten minutes, and was succeeded by coma which continued until her death. All the vessels in which any blood was found contained blood of white color, or of the pinkish hue shown in the specimen. In the heart there were some reddish coagula, and a quantity of blood looking like coagulated milk. The occurrence of dyspnœa is interesting in connection with this fatty condition of the blood.

Rupture of the Middle Meningeal Artery.—Dr. A. T. Weston presented a portion of dura mater showing rupture of the middle meningeal artery. The man from whom the specimen was taken was about thirty-nine years of age. About 12 o'clock on the preceding day he had received a blow on the head from an Indian club. He went home, and, feeling sick, went to bed, and, as it was thought, went to sleep. About 3 P.M., when his children returned from school, they found that he could not be awakened. He was then found to be completely comatose, and about two hours later he died in the hospital.

There was no ecchymosis externally, but on removing the calvarium, a large clot was found separating the dura mater from the skull, which measured four inches anteroposteriorly, and about one and a half inch in its thickest part. There was also a linear fracture, about three and a half inches long, extending perpendicularly about one and a half inches in front of the ear. The clot pressed on the brain sufficiently to cause extreme flattening of the convolutions of the left hemisphere. There was also a slight contusion on the right side of the tempero-sphenoidal lobe, from contre-coup. There was no other ruptured vessel. He had seen quite a number of cases of this kind, and in the majority of them there was no fracture, and no injury to the brain except the compression. He thought something might have been done surgically for this case, if the treatment could have been instituted sufficiently early.

Dr. L. A. Sayre concurred in the opinion that if the diagnosis had been made sufficiently early it would have been a proper case for trephining and removal of the blood-clot.

Weigert's Recent Staining for the Nervous System.—Dr. Joseph Collins presented microscopical specimens of the above. According to this method, which he had already described in an article in the New York Medical Record, last October, nerve-fibres were shown with unusual distinctness, and the contrast between the ganglionic cells and their fibres was much better than by Weigert's older method, and the time occupied in preparing the specimens is much less. The results are also more certain if proper precautions be taken in the staining.

The tissue is hardened in Muller's fluid, and treated in the usual way with ninety-five per cent. alcohol, and then immersed for an equal time in absolute alcohol. It is next treated for about the same length of time with thin celluloidin, and is then placed on a cork and immersed for twenty-four hours more in thicker celluloidin, after which comes the "coppering." The tissues are floated for twenty-hours in a mixture of equal parts of a ten per cent. solution of tartrated soda, and a cold saturated solution of acetate of copper, which is kept in an incubator at a temperature of 38° C. for about twenty-four hours. They are then transferred to a mixture of equal parts of the acetate of copper solution and distilled water, and are allowed to remain in this for another twenty-four hours, after which they are transferred to eighty per cent. alcohol until ready for sectioning. The sections ought to be quite thin, and large pieces require to be treated for twenty-four hours more, at the same temperature, in a mixture of equal parts of water and a saturated solution of cupric acetate. The staining fluid consists of two solutions, which should be kept in separate bottles, and freshly mixed each time. The first solution is the ordinary alcohol hæmatoxylin solution (1 gramme hæmotoxylin to 10 c.c. of alcohol), and the second is a mixture composed of 7 c.c. of a saturated solution of lithium carbonicum in water, and 93 c.c. of distilled water. As ordinarily used, five parts of the first solution are mixed with forty-five parts of the last mixture, and the sections are allowed to remain in this fluid for from four to twenty-four hours, or even for a longer period, when it will be found that differentiation has taken place, thus doing away with the older and much more tedious process of differentiation. The sections are washed in distilled water, dehydrated in ninety per cent. acohol, and clarified in anilin xylol (2 to 1), after which they may be mounted in balsam or in dammar. The balsam must be diluted with xylol and not with chloroform, as the latter would remove the stain from the fibres. If the specimens are not sufficiently decolorized, wash two or three times with water after coming out of the hæmatoxylin solution, or immerse in a half per cent. solution of acetic acid for a very short time.

Dr. Collins exhibited a specimen from the medulla, and also one of the cortex of the brain of Nordcross, the bomb-thrower. This specimen was taken from the frontal convolutions, which appeared at the autopsy to be normal. Under the microscope, the specimen shows an extraordinary fineness of the protoplasmic axis cylinders.

Fibroid Tumor.—The President presented a specimen showing a fibroid tumor complicating pregnancy. The uterus contained a fœtus of about two and a half months, and a large fibroid tumor involved the right uterine wall and the anterior portion of the uterus. The patient was twenty-eight years of age, and was perfectly well up to two and a half months before admission, when the menses ceased and she began to suffer from reflex disturbances, especially from pain in the lower portion of the abdomen. At times she had what she called "a greenish discharge." On admission, examination showed a mass to the right of the uterus. It was decided that the mass was not a fibroid, but an extra-uterine pregnancy, on account of the reflex disturbance and many of the symptoms of pregnancy which were present. Laparotomy was performed by Dr. Barrows, and as soon as the mistake was discovered, the uterus was replaced and morphia given to stop the uterine contractions, but within forty-eight hours the patient died. The cause of death was apparently shock, as there was nothing about the opera-

tion-wound to suggest any other cause. The specimen illustrated the difficulties in diagnosis presented by this class of cases.

Sudden Death Due to Fatty Degeneration and Dilatation of the Heart.—The President also presented specimens from the above case. On the previous evening the man was walking along the street in apparent health, when suddenly he fell dead. At the autopsy, no cerebral hemorrhage was found, and no pathological changes except in the heart and, secondarily, in the kidneys. The heart was excessively dilated, and microscopical examination showed that the cardiac walls were the seat of extensive fatty degeneration, hardly any of the muscular fibres having escaped this degenerative change. There were no arterial changes and no blood-clots in the heart. The kidneys showed moderate parenchymatous nephritis. The case was interesting as affording an explanation of many cases of sudden death.

The Society then went into executive session.

Correspondence.

YELLOW FEVER AND THE NEGRO.

To the Editor of the Medical Record.

Sir: In a recent number of the Medical Record you stated that, although the African negro is believed by many to possess immunity from yellow fever, the question cannot be considered as settled. Allow me to call your attention to an extract from a letter of C. Creighton, which appeared in *Nature*, June 30th, and which is quoted in *Science*, July 15th: "This point (the immunity of the Ethiopian from yellow fever), interesting to anthropologists, is raised anew by a writer on the history of epidemics (*Nature*, June 16th), who asks whether the alleged protection is supported by all recent authorities. Recent authorities are not so well placed for judging of this matter as the earlier; for the reason that immunity is not alleged except for the African negro of pure blood or unchanged racial characters, and that these conditions of the problem have been much less frequently satisfied in the yellow fever harbors of the western hemisphere since the African slave trade ceased. However, there was a good opportunity in 1866, during the disastrous yellow fever among the French troops of the Mexican expedition when they lay at Vera Cruz. Among them was a regiment of Nubians, who had been enlisted for the expedition by permission of the Khedive: that regiment had not a single case of yellow fever all through the epidemic. The African negro regiment brought over from the French colonies of Martinique and Guadeloupe had two or three cases, with, I think, one death. The rest of the troops, including Frenchmen, Arabs from Algeria, native Mexicans, and Creoles, had no immunity whatever, but, on the other hand, a most disastrous fatality. The medical officers of the French service have recorded the facts principally in the *Archives de Médecine Navale*, their conclusion as to racial immunity being the same that has passed current among the earlier authorities as a truth of high general value (admitting, of course, of exceptions in special circumstances), and a truth that has never, so far as I know, been formally controverted by anyone, although other points concerning yellow fever have been the subject of as obstinate controversy as those touching smallpox itself. The experiences of the French at Gorée, a town with ten times as many negroes as whites, exactly confirmed those of Vera Cruz in the same year (*Archives de Médecine Navale*, ix., 343). The immunity of the African negro from yellow fever has become a paragraph in some anthropological text-books. It is from the anthropologists, and not from medical authorities, that Darwin cites the fact in his "Descent of Man," adding an original theory of the immunity which he was unable to establish after much inquiry. His theory, I need hardly say, was not that "negroes in infancy may have passed through some disease too slight to be recognized as yellow fever"—whatever that may mean—"but which seems to confer immunity." The theory, however, is another story, or "another volume," as the writer just cited is pleased to suggest; and as for the historical fact of immunity, no one denies it, unless it be Dr. Pye Smith in his recent Lumleian lectures (*Lancet*, April 23, 1892, p. 901), who gives no reasons. It is unfortunate that the anthropologists (Darwin among them) should have introduced one element of dubiety in placing mulattoes on the same footing, in respect of immunity, as negroes of pure descent, and another in mixing up malarial or climatic fevers with yellow fever."

This author evidently inclines toward a positive assertion of the immunity. I have, myself, to offer some facts, which I think I might call collateral, and which, in an indirect way, speak rather for Creighton's affirmation than for your own hesitancy of belief. You are aware, without doubt, that the Japanese have, at least until these very latest times, enjoyed two immunities, which undoubtedly belong to the negro race: the immunities from scarlet fever and locomotor ataxia. Some say that the thin edge of the former disease is beginning to penetrate into the race. But the immunity during the past is quite sufficient for my purpose of argumentation. The Japanese have been in the past closely allied to the negroid races; the black element is now quite fusioned with the other elements of the race. Nothing is more probable than that the two Japanese immunities which I have mentioned are a transmission from that partially parent stock. The Japanese have had as yet no experience with yellow fever. But that may possibly be explained by their never being really exposed to it. It will be interesting to see whether the Japanese immigrants, now, it is said, flocking to Mexico, will there, under less favorable circumstances, remain untouched by the fever.

The Japanese have, as I said, a negroid inheritance. The negro is probably the most ancient of human races. The most ancient pathological origins can be traced back to it: leprosy, syphilis, tuberculosis, etc. Is it not likely that, in this ancient race, some pathological tendencies have run their course, some diseases have exhausted themselves, and that immunities have thus been attained which the younger European white race does not yet possess?

Creighton's conclusion, that it is unfortunate that an element of doubt should have been introduced into the matter by placing mulattoes on the same footing, in respect of immunity, as negroes of pure descent, corroborates what I said in my recent discussion with Dr. Stillé, in the Medical Record, that the introduction of Caucasian blood would be followed by the transmission of susceptibility to scarlet fever, to the Japanese race.

Very sincerely,

Albert S. Ashmead, M.D.

4 King Street, New York.

A RETRACTOR FOR AMPUTATIONS.

To the Editor of the Medical Record.

Sir: Under the caption of "New Instruments" I notice, in the Medical Record of July 30th, an article by Dr. E. J. Meyer, of Buffalo, N. Y., describing his retractor for amputations. I hereby wish to congratulate Dr. Meyer on the most efficient retractor he devised, and yet beg to object to the words "a new instrument," as given in the description of same.

Ever since 1888, Professor F. O. Guermonprez, of Lille, France, of whom it was my good fortune to be the "interne" for more than three years, uses a metallic retractor similar to the one figured by Dr. Meyer, and made of two zinc plates which, when in use, partly overlap and receive the bone or bones to be divided within a lateral recess, thus insuring all the advantages claimed for the instrument previously described.

The fact, however, that at such a distance two wide-awake and practical surgeons have each for himself hit

on the same idea, goes to prove that a real need has been filled, and that the metallic retractor has undoubtedly come to stay.

J. V. Becelaere, M.D.

432 East Congress Street, Detroit, Mich.

THE ANCIENT HISTORY OF A NEW EAR INSTRUMENT.

To the Editor of the Medical Record.

Sir: In the Medical Record of May 28, 1892, Dr. Frank Allport has an article on "Some New Ear Instruments, with Remarks on the Treatment of Chronic Purulent Inflammation of the Middle Ear." In this article he calls attention to a "modification of a recent instrument and to two new ones." One of these new instruments he calls a "smooth ear-curette."

To me this curette was by no means new, as I have been using it for over eleven years. It has been kept in stock by several Philadelphia instrument makers (Kolbe, Lentz, Gemrig) for a number of years. So far as I know, the instrument was devised by Dr. George Strawbridge, of this city, many years ago. I remember that in his lectures on the ear at the University of Pennsylvania, he always showed this instrument to the class, and specially emphasized its value It is now within a few months of thirteen years since I first heard him speak of this curette and demonstrate its value. I believe he named it the "Blunt Ear-curette."

Of the curette's usefulness in many cases there can be no doubt. Anyone who is engaged in doing much ear work will, if he has used it, testify to its value. In the hands of those who are inexperienced in this line of work it might prove harmful, but probably less so than any other metal instrument used in the same way.

Being sorry that I have been compelled to prove a new instrument an old one, I am,

Yours respectfully,

Louis J. Lautenbach, M.D.

1723 Walnut Street, Philadelphia, Pa.

THE MICROBICIDAL ACTION OF TOBACCO-SMOKE.

To the Editor of the Medical Record.

Sir: In your number for July 2d, page 10, is a reference to the experiments of Tassinari, to ascertain the influence of tobacco-smoke upon the growth of bacteria. Other medical and scientific journals have also contained such accounts, but nothing has been said of the earlier work of Dr. W. D. Miller, an American dentist practising in Berlin, holding the position of Professor in the Dental Institute of the University of Berlin, and I believe the only foreigner ever appointed to a Royal professorship in Germany.

In an article upon "Fermentation in the Human Mouth," published in *The Independent Practitioner* (a monthly dental journal then published in Buffalo, N. Y.) for June, 1884, pages 284 and 285, Professor Miller, after detailing experiments with the juice of tobacco upon the bacteria of the oral cavity, goes on to say:

"Yet more remarkable, however, was the action of tobacco-smoke upon the fungi; the smoke from the first third or last quarter of a colorado claro cigar being found amply sufficient to sterilize ten cubic centimetres of a beef-extract-sugar solution, previously richly infected with caries fungus. . . .

"In consideration of the strong antiseptic power of tobacco-smoke, we might be inclined to infer that tobacco-smokers should never suffer from caries of the teeth; it is evident, however, that there are many points in the dental arch to which the smoke never penetrates."

A cut of the apparatus used in the experiments, with a full description of the process, accompanies the text. In the first volume of "The American System of Dentistry" (Lea Brothers & Co., 1886), the article, with the illustrations, is reproduced. The experiments of Miller antedate those of Tassinari by a considerable period, and are quite as conclusive.

I am very truly yours,

W. C Barrett, D.D.S., M.D.

208 Franklin Street, Buffalo, N. Y.,
August 17, 1892.

New Instruments.

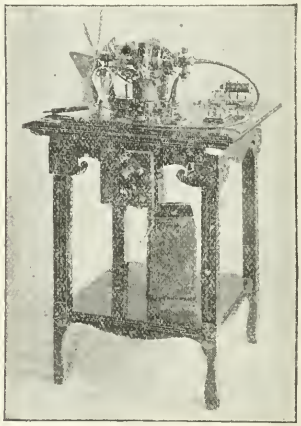
AN ELECTRIC MACHINE FOR THE PRODUCTION OF ALL KINDS OF ELECTRICITY FOR MEDICAL PURPOSES FROM A SINGLE STORAGE BATTERY.[1]

By ROBERT L. WATKINS, M.D.,

New York.

I have believed for a long time that electricity, for all varieties of medical use, could be generated from one storage battery. The machine which I now take pleasure in presenting before you, constructed for me during the last year, is the result of experimentation for some time past, to meet this need I have long felt. I have found it to work with satisfaction in many cases, and especially in diseases where the galvanic current has formerly answered.

Without describing the apparatus in detail, going into technicalities, or giving electrical measurements, I will,



for the sake of brevity, in as few words as possible, outline the machine and demonstrate its simplicity and practicability; for it is not complicated or liable to get out of order. The machine is small, well made, and constructed by reliable and skilful workmen. This transformer is composed of a motor and an electric generator combined. Its weight is about thirty pounds. The electricity is taken from one storage-cell weighing about fifteen pounds. The current which can be taken off from the terminals of this transformer is about one hundred volts, and the current given can vary from 150 milliampères down to zero. It is thus seen that a current equivalent to that from 60 Leclanche cells is easily obtained. This electro-motive force can be varied according to the use or muscular contraction required, by means of a small regulator on the motor. The size of the storage-battery can vary according to the kind and amount of work to be done; and this in turn can be charged from the street current, from an electric light station, or by means of primary batteries, which may, if used, be kept constantly in circuit. This will keep the storage battery in good condition.

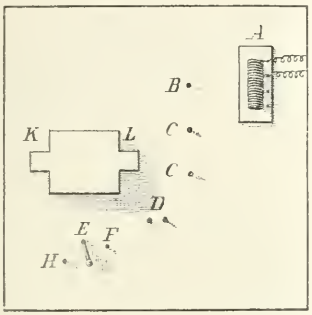
[1] Read before the New York County Medical Society, April 25, 1892.

Before demonstrating the working of the machine, I will describe the cabinet attachments :

1. Here are two binding posts connected direct from the storage-cell for use in cauterization and electrolysis. On account of the latter use and the heavy cautery work, two other storage-cells are in my cabinet at home ; so I can obtain six volts with, of course, a larger ampèrage.

2. I have an induction coil for the faradic connected direct to the storage cell.

3. I use a Vetter's current controller for a variety of purposes.



Top View (24 × 24 inches). *A*, Faradic coil ; *B*, *C*, connections for light ; *C*, ... direct or galvanic current ; *E*, switch, either for light when on *H*, or for direct current when on *F* ; *K*, motor end, and *L*, generator end of machine ; *D*, cautery posts.

Demonstration.—1. I will switch on the faradic, the buzzing of which is so familiar to you all as to require no further demonstration.

2. I now attach the sponges to the electrodes and take the current direct, which current corresponds with the galvanic. You perceive by means of this current-controller on the motor I can vary the strength of the electricity according to the contraction required.

3. I now attach my cautery of two volts, which is sufficient, if properly arranged, for most any cautery work.

4. I now slow up and attach the fan sometimes used in the sick-room, to keep the air in circulation. This fan is now revolving at the rate of 1,800 revolutions per minute, and the machine generating an electro-motive of over one hundred volts.

5. I now attach the drill. Its use in nose and throat work you are all familiar with.

6. Now, gentlemen, for transillumination and for examining cavities, I introduce an electric light of 15 volts, and thus do away with the low voltage lamp for one of high voltage, which produces little or no heat ; for, as you are aware, one of low voltage heats up so quickly as often to prevent its use. Lamps of any size can thus be used with this machine. The machine is now running at the rate of 1,800 revolutions and developing 150 volts. To prove the voltage developed, as near as possible, I will slow down the electro-motive force and connect a 100-volt eight-candle-power Edison lamp. You will now observe that all appliances attached to the machine are running simultaneously. If more power is wanted for any purpose, it can readily be obtained by introducing another storage-battery in series, and thus having 4 volts in the primary circuit the power will be doubled ; I will then obtain 200 volts or more, $\frac{1}{2}$ an ampère, $\frac{1}{6}$ of a horse-power, and 4,000 revolutions per minute.

Several of these machines have been made by electrical engineers for me during the past two years before one was obtained which worked successfully, and for that I am indebted to Mr. Nikola Tesla.

320 West 145th Street.

Jenner and Japan.—The physicians of Japan are taking steps to celebrate the Jenner centenary by the erection of a statue to that "medical benefactor of mankind."

LAMBLIN ABDOMINAL NEEDLE.

By J. W. SMITH, M.D.,
ST. LOUIS, MO.

This needle needs no manipulation other than its thrust through the tissue and its withdrawal after it is threaded, as it is self-adjusting. It is provided at the posterior arch of the eye with a little fly, which is caught by the tissue as the needle passes through, thereby opening the eye to receive the ligature. It is then threaded and withdrawn. In so doing the little fly is caught by the tissue and completely closed over the ligature, by which it not only prevents the ligature from slipping out of the eye of the needle, but also acts as a guard for the tissue from the spear point. When flaps or wounds to be stitched are obese, thick, or heavy, it is very difficult, with the old-style needle and needle-holder, to pass the needle through both sides at the same time, requiring the adjusting and readjusting of the needle-holder, consequently considerable time is wasted and unnecessary pulling, stretching, and handling of the tissues, which are not to be encouraged, especially in dealing with peritoneal membrane.

In abdominal stitching the needle should be held so as to allow the index-finger to rest within a half or three-quarters of an inch of the needle point, so as to guard its depth and course, in order to prevent the careless wounding of the intestines or other tissues. With an experienced assistant an ordinary laparotomy wound may be stitched and tied in two or three minutes after the peritoneal tissue has been caught and held by the forceps. The more tedious and serious the operation has been, the more important is the time saved at this stage of the operation, for it is now the patient has reached the climax and very likely is entering the state of shock from the sudden removal of pressure caused by large tumors, loss of blood, or long-continued anæsthesia, etc.

I have also used this needle in stitching scalp wounds, and in sewing up flaps after amputations ; in fact, it will be found advantageous in most all stitching of the soft parts.

The Lamblin needle is an all-metal aseptic instrument, needle and bar made of steel and about five inches long, with fluted metal handle hermetically soldered to needle-bar ; the handle is four inches long, thus making the entire instrument nine inches in length.

I am indebted to Messrs. A. S. Aloe & Co., of this city, for the perfect model of this instrument, being manufactured from the original pattern of Collin et Cie, Paris, as made for Professor Lamblin, the original model being imported by the above firm, and first introduced into this country about one year ago.

The Medical Missionary.—A Hindoo, jealous of the encroachments of Western civilization on his traditional beliefs, when asked, "Which of all the methods of that civilization do you fear the most?" naturally enough evaded the question, remarking, "Why should I put weapons in the hands of an enemy?" At last he said, "We do not greatly fear the missionary schools, for we need not send our children. Nor do we fear their books, for we need not read them ; nor their preaching, for we need not listen to it. But we dread the doctors and the women. The doctors are winning our hearts and the women our homes ; and when our hearts and homes are won, what is there left of us?" It is, in truth, with the advent of the medical man and the trained nurse that progress has been made in the reclamation of the backward Oriental, and the annals of missionary enterprise would lose half, and more than half, of their practical interest if these two factors of their work were omitted from the record.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending August 20, 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	49	10
Scarlet fever	34	2
Cerebro-spinal meningitis	0	2
Measles	85	6
Diphtheria	49	13
Small-pox	6	1
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0
Mumps	0	0

The Lessened Vitality of Females at the Time of Puberty and Adolescence is a striking fact, according to Sir James Crichton Brown. Throughout life, in every quinquennium, the mortality of males from small-pox exceeds that of females, and that in a very marked degree, except in one quinquennium from the tenth to the fourteenth year, when the female exceeds the male mortality, being again but very slightly behind it in the succeeding quinquennium from the fifteenth to the nineteenth year. At all ages the male death rate from enteric fever exceeds that of females, but the female mortality is very considerably higher from the third to the twentieth year of life. In infancy and also in old age, the male mortality from diarrhœa and dysentery exceeds the female mortality, but in the child-bearing period, from fifteen to forty-five years of age, the mortality is distinctly higher among females. And even more striking in this connection are the statistics of phthisis than those of zymotic diseases. Phthisis is more fatal to males than females under five years of age; but then a change takes place, and from five to ten it is much more fatal to females than to males; while from ten to fifteen it is more than twice as fatal to females as to males. From fifteen to twenty phthisis is still much more fatal to females than to males; from twenty to twenty-five the mortality from it is exactly equal in the two sexes, and from twenty-five to thirty, and at all subsequent ages, the mortality from it is much greater among males than among females. Dr. Brown is inclined to attribute this to over-pressure in education; but surely there are many other factors more important in lowering the vitality of young women.

Chlorosis Treated by Sulphur.—Dr. Schulz calls attention to the value of sulphur in certain cases of anæmia and to the excellent results obtained by the use of sulphur waters in malarial cachexia. He draws the following conclusions: 1. In cases of pure chlorosis in which iron proves inefficient, the general condition is decidedly improved by sulphur. 2. After the administration of sulphur has gone on for some time, treatment with iron can be commenced and continued with success. 3. In cases of chlorosis complicated with catarrhal and inflammatory conditions of the digestive track, sulphur is contra-indicated.—*Berlin klin. Wochens.*, No. 13, 1892.

A Frank Consultant.—Sir William Gull may be taken as a type of the candid consulting physician. His remarks to his professional brother, who had called him in, were sometimes almost as unreserved as if he were thinking aloud. In a recent memorial notice of Dr. Gull, in *Guy's Hospital Reports*, we find mention of the following instances bearing on this subject: He once met a physician in a case of rheumatism in which Dr. Gull recognized a pericardial friction sound. Nothing was said to the family about this newly discovered element in the case; the general treatment was approved and the two medical men left together. The physician in charge expressed his thanks to the other that he had not disclosed the "dreadful oversight," and added: "I cannot think how I can possibly have failed to detect the pericarditis." "Never mind," said Gull, "it is just as well, for, if you had detected it, perhaps you might have treated it." To a family practitioner who had much to say about his patient's constitution and peculiarities, Gull would say: "How can you understand anything about this man's 'constitution,' when you have never made an examination of his urine?"—*New York Medical Journal.*

The Therapeutic Uses of Iron.—The tonic and hæmatinic properties of iron were well known to the ancients. The old way of administering this metal was very curious. The metal being very much used in the preparation of weapons of warfare, and Mars being the god of war, Mars became the patron of iron; and very frequently in old books we read of the "martial preparations," by which is meant preparations of iron, and the mode of administering them was to put a sword into a water-trough and allow it to lie there and rust, and to let the people drink of the water. Of course, it was a very mild chalybeate water that could be got in this way. But still, very mild preparations of iron, if continued for a long period of time, will produce a very marked effect; and distinct results were obtained in ancient times from this very mild way of giving iron.—*Lancet.*

Oatmeal Pyrosis.—The author of the *Asclepiad*, Dr. Benjamin W. Richardson, says, in a recent number of that publication: "An obstinate case of pyrosis came under my care some years ago, and resisted all forms of medical treatment. The dietary of this patient, an orderly and temperate man, seemed to call for little supervision; in fact, I never remember to have had under my care anyone who was simpler or more methodical in the way of feeding and drinking. I recommended him to leave off tea, and he obeyed, but with no beneficial result. Coffee was withdrawn, with no better result. The patient was an abstainer from alcohol and did not smoke, so reforms were not called for in those directions. For a time he left me and consulted another physician—I believe more than one—but after a few months he returned, complaining of the continuance of the symptom that so oppressed him. He really suffered acutely. Each morning, between breakfast-time and luncheon-time, the water-brash came on. The quantity of food ejected from his stomach was considerable, and the ejection was preceded by a sense of sinking at the heart and faintness which sometimes alarmed him. By the free discharge of the fluid from the stomach he was invariably relieved, and rarely had any return of symptoms until the following day. The story of the repetition of the attack, always at the same or about the same hour, was so peculiar and so often repeated that I could not fail at last to attribute it to something taken at breakfast; and finally I began to suspect that a dish of oatmeal porridge might be the enemy. He had taken this for breakfast for many years, and had never thought it injurious, and when I named my suspicion he was incredulous. However, he took the advice to leave off oatmeal 'on trial,' and from the day of leaving it off had no return of his symptoms. Six months later he ventured the oatmeal diet again, and in a week was as bad as ever. Once more he left it off, and once more was completely cured. This was observation on a patient; but, for experiment's sake, I tried the effect of oatmeal diet on myself, with the result of setting up in a few weeks as decided an attack of pyrosis as could be observed or felt. In my own case I found that barley-water, repeated for a time, produced the same result. After making these observations I continued to inquire, in all instances of pyrosis I have since met with, whether oatmeal formed a part of the dietary of those affected; and I have found so many corroborative experiences that I am led to think there is no more frequent cause of pyrosis than oatmeal or a similar fermentative food."

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UPON A POSSIBLE ELECTRIC POLARITY OF METABOLISM, AND ITS RELATIONS TO ELECTRO-THERAPEUTICS AND ELECTRO-PHYSIOLOGY.

A Suggested Basis and Guide for Medical Treatment by Electrical Energy.

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I. **Electro-Therapeutics.**—Upon initiating, at the Post-Graduate Medical School and Hospital, a clinic for the treatment of diseases by electricity, I was, at the outset, in face of the great variety of diseases to be treated, met by a difficulty that had long confronted me, and that doubtless has opposed itself to the efforts of most physicians in the attempt to apply electrical energy to medical use. That difficulty was to decide upon some rational method of applying the energy to combat disease.

I do not now refer to electro-surgical procedures, like galvano-cautery, where the heating effects of the current is availed of, nor to galvano-caustics, where the local chemical action of electrolytic products is relied upon, but rather to the general applications of electricity in medicine. In these the practitioner finds in his power for use a greater number of therapeutic effects than cluster around any other curative agency. For the sake of simplicity, the galvanic current only is referred to. From a physiological point of view, he may rest upon the certain basis of the contractile effects of electric currents upon animal protoplasm, or upon vaso-motor effects, and upon the phenomena of electrotonus, or may confine his treatments to ascending and descending currents; or he may turn to chemico-physical effects, and may base his treatments upon electrolysis, polar, and intra-polar, and upon cataphoresis; or, finally, he may turn to general medical literature and adopt a clinical basis, as an example of which I quote a list of purposes which electricity may serve, as given by a recent writer of note, viz.: Sedative, stimulant, counter-irritant, and vesicant, muscle contraction, antispasmodic, tonic, promoter of development, absorbent, chemical cautery, coagulator, electrolytic, hæmostatic, promoter of hemorrhage, decongestor, and as a medicator. The result of this embarrassment of riches, so to speak, in electro-therapeutics is a lack of unanimity of opinion as to the employment of any given method. As regards the choice of one pole or the other, there exists but one fixed procedure, based upon the physiological statement that the positive pole is sedative, and the negative stimulating to nerves.

Again, from the point of view mentioned, as well as from many others, electro-therapeutics, like all other branches of therapeutics, is far from being an exact science. We know neither the processes of disease, on the one hand, nor the mode of action of remedies on the other. We are treating the unknown by the aid of the unknown; we cannot define life, nor that perversion of life processes which we call disease. We cannot define electricity, nor do we know its mode of action upon the tissues, except in a secondary sense, as a liberator of destroying chemicals or in a mechanical or chemico-mechanical sense, as in cataphoresis, or in a physiological sense, as an excitor of the irritability of nerve and muscle. But, though our knowledge of the action of drugs and of electricity is imperfect, we are not relieved from the duty, as physicians, of continuous endeavor to secure further knowledge. That electricity, that drugs possess definite and powerful actions for good in disease admits of no doubt. With the fact itself we are confronted, and it is this we must attempt to solve. We are in the midst of the studies of the normal and morbid processes of disease, from the standpoint of physiology, particularly chemico-physiology; the animal cell, so long the subject of morphological investigation, is now being subjected to a searching chemico-physiological scrutiny. The story of its protoplasmic life, as it is being unravelled, throws daily light upon disease and upon the mode of action of drugs and energies used to combat disease. And it is from this standpoint, the chemical life-history of the cell, that I believe electro-therapeutics should be most carefully studied, and it is in this line of thought, that I invade that almost unknown intrapolar region and venture to suggest a speculative hypothesis which may serve as a basis for exact electrical treatment, founded upon the actual or possible chemical changes going on in disease, as in health, in living tissues, and upon the supposition, that if chemical affinity may create a potential difference, and an electro-motive force in the tissues, then external (medical) electro-motive force and electric current, may, in turn, promote, or arrest in the same tissues, that chemical affinity (nutritional) which in the first instance was capable of creating the potential difference and resulting animal current.

Living a Process of Chemical Exchanges.—Life may be said to be a chemical process. Everything that lives assimilates food, and from it forms products, most of them differing from those assimilated. The products are definite chemical products, the act of assimilation a chemical act. Oxygen, carbon, hydrogen, nitrogen, sulphur, and other elements, singly or in various chemical unions, enter a living organism, and in new combinations build it up, or become converted by chemical affinity into waste products, thrown off, as in animals, or stored up, as in plants. The cell, the structural unit of the whole, selects and appropriates to itself such of the elements as will build up its own structure, or its own cell contents, and is in time, as continuously destroyed by oxidation. The selective, appropriating, building, and destroying process, is both analytical and synthetical. In destruction or oxidation, the inspired oxygen of the air eventually unites with carbon to form carbonic acid, with hydrogen to form water, and with carbon, hydrogen, and nitrogen, to form urea, uric acid, and creatinine. By reason of these chemical exchanges, the structural entirety, and the functions of the living organism are maintained in stable equilibrium. Other familiar chemical compounds which are the results of the chemical function of living organisms are the alcohols, the organic acids, and the fats, the ammonia derivatives, such as the amides and the amines and the proteids, albuminoids, pigments, ferments, carbohydrates, and glucosides. In short, a human body is a most active chemical laboratory, whose processes and products cannot yet be imitated by the chemist.

The general term of metabolism is applied to this ceaseless, while life exists, round of chemical exchanges; the terms anabolism, to represent constructive metabolism, and katabolism to represent destructive metabolism.

Anabolism is the constructive, katabolism, the retrograde metamorphosis of tissue. These terms include evidently both morphological and chemical processes. The interrelation of the two is inseparable. It would be impossible to say that either was fundamental. Without the cell substance there would be no chemical exchanges, and without the chemical exchanges no cell substances could be maintained. The mystery of why these chemical exchanges take place need not detain us. This mystery ever confronts us in each blade of grass, in every unicellular, as well as in the higher and more complex, organisms. Nor do I think it essential to inquire to what extent these exchanges are under the control of the nervous system. Neural impulses may admittedly initiate nutritional processes. Gaskel would go so far as to say that constructive metamorphosis (anabolism) is presided over by one set of nerves, while destructive metamorphosis (katabolism) is presided over by another. But it may be borne in mind that just as that form of energy known as heat is essential to start the oxidation of coal or wood, so that its potential energy may be liberated into kinetic or actual energy, so in the same manner may the nervous impulses initiate that explosion, of muscle-substance, for example, whose ultimate result is exhibited in the form of muscular contraction, heat, and *electricity*. The chemical tissue changes have stored energy, the gunpowder, so to speak, while the nerves represent the match, which, in setting free the potential, sets up the actual energy or explosion. Were the point that nerves control nutrition pressed too closely, we might ask what controls the chemical exchanges of the nervous centres, whence emanate these primary controlling impulses. From this point of view, it would seem that the vegetative capacity of the cell, viz.: its chemical capacity, was the ultimate limit of present knowledge. It is, however, enough to satisfy the requirements of the theory I wish to suggest, to rest at this point, viz.: that living is a process of chemical exchanges, and take a new departure.

Transformation of the Energy of Chemical Affinity into Electrical Energy in Living Tissue.—To have established that living tissues are both built up and broken down by the metabolic process of chemical exchange establishes equally what we know to be the fact, that energy is both stored up and set free in these tissues. The radiant energy of light and heat is stored, in potential form, by the plant, and in the shape of food becomes living animal tissue. This tissue in the process of life is attacked by oxygen, suffers oxidation or combustion, and consequent disintegration, becoming converted into simpler elements, constantly given off by the skin, kidneys, and lungs (carbonic acid, urea, creatinine, water, etc.), and releasing potential energy into the actual or kinetic energy of heat, mechanical force, and electric energy. To avoid confusion, we will, for the present, limit our attention to combustion changes, since these predominate in the living animal tissue, and since this fact affords us the ground-plan of our structure.

"The potential energy of chemical affinity in living tissue," says Halliburton, "is transformed, and exhibits itself partly as heat, partly as electrical change, partly in the form of mechanical work." In the animal organism the phenomena of electro-motive force and heat may be conceived of as primarily due to oxidation and to be related to each other in sliding scales, one predominating at the expense of another, in certain cells and groups of cells, in both normal and abnormal processes. This view will be developed under electro-physiology. Of these phenomena, the electro-motive are grouped under the title of Animal Electricity.

Animal Electricity.—There is every reason why the human body, a living mass of diverse constituents in chemical action, should exhibit currents, and as a consequence possess electro-motive sources or centres whence spring these currents. Indeed, it seems most probable that for every current discoverable there must be an infinite number which are no sooner originated than they are extinguished by immediate short circuit, or which are employed in further acts of metabolism. A parallel to the condition of short circuit exists in a fact well known to the management of galvanic batteries. Chemically pure zinc is unattacked by acidulated water. The ordinary zinc is impure by reason of lead, arsenic, and cadmium. The impurities form with the zinc little local galvanic couples, in which the zinc is the metal attacked; that is, the zinc is electro-positive to any of the other three. These form closed circuits, and currents ensue, with destruction of the zinc, and to prevent this, battery zincs are amalgamated with mercury. The elementary facts of contact electricity alone would teach us that living tissue should generate currents. Any two metals which touch each other exhibit opposite electric charges. Between zinc and platinum the difference of electric change is very marked. Volta arranged a series of metals in which every successive one was positive to the one next lower in the series. Two dissimilar liquids in contact likewise show a difference of charge, as well also as a liquid and a metal, or even a hot and a cold metal; in short, all heterogeneous masses brought into contact exhibit this electrical difference. And if a difference of charge exists at contact, we know that in order to maintain a continuous flow between the two substances in contact, it is only necessary that chemical action be maintained between one of these and an electrolyte, while the electrolyte bathes both; under these circumstances the chemical action is initiated by the greater affinity of the oxygen atom for zinc than for copper, for instance, and by the potentially free state of the atoms in the electrolyte, as must be the case in all electrolytic conduction. These are conditions which exist in the living animal: we have the diverse substances in contact; the oxygenated blood and lymph electrolyte, and the chemical actions, as, for instance, the avidity for oxygen, which are the very essence of metabolic exchanges, particularly the katabolic.

Electricity, whatever it may be, is everywhere, but we know it as such only when its equilibrium is disturbed and we have too much in one place and too little in another, and term the extremes positive and negative. As Dr. Oliver Lodge has said, if the air were always in a state of perfect calm we should not know that such a thing existed. We are only conscious of it when its equilibrium is disturbed and we feel and see the effects of the winds. So in animal currents, they exist, though not observable, except in special instances and when sought for. The living organism is exactly constituted to effect this disturbance of electrical equilibrium. In short, I see no reason why we should not assume that there is no chemical exchange in a living organism so minute as not to produce, under proper conditions of circuit, its due quota of electric polarity and consequent current. Some of these currents, under favorable conditions of conductive arrangement of tissues, are demonstrable as animal currents.

The existence of electric currents in living tissue was first brought into prominence by the discovery of Galvani, who believed that the current he had discovered had its origin in the tissue brought into contact with his two dissimilar metals. Fabronius and Volta traced the origin of the current to the metals employed, and the former again to the chemical action existing or set up and continued in one of them. The subject of animal currents was extensively studied by Nobile and Matteucci. But it is to the indefatigable labor of DuBois-Reymond that we owe the greater part of what is known about the phenomena of electric currents in animal tissues. He also brought the phenomena which he studied into relation with the normal irritability of nerve and muscle, and established most important electro-physiological laws. To him we owe the terms "current of the nerve or muscle in repose," and "negative oscillation," expressive of the facts observed, and "electrotonus."

To explain the generation of a current in a muscle DuBois-Reymond conceived of the division of a muscle into cylindrical "elements," which he termed electromotor elements, each one the seat of an electro-motive force, which rendered the element positive at its longitudinal surface and negative at its end. The element is substantially a fragment of the muscle. These elements assembled constitute the entire muscle, which, in turn, and as a whole, exhibits a similar relation of polarity. The element, in its turn, was made up of molecules, and to a rotatory movement of the molecules in the interior of the element, by reason of which the position of their poles and equators changed position, he attributed the changes in potential difference observed in the currents of repose, and in negative oscillation. The word molecule, in the sense in which DuBois-Reymond uses it, does not correspond to the ordinary use of the word, but to an aggregation of the usual chemical and physical molecules. Essentially the same construction plan he applied to nerves. To explain electrotonus, he claimed that the nerve molecules change their position under the influence of the constant current, and that this change produces a different distribution of the "tensions" at the surface of the nerve. Upon arresting the passage of the current the change of position ceases. The change in the position of the molecule changes the state of the nerve as regards its irritability, and explains the facts of "electrotonus."

Schiff carefully re-examined the subject, and regards the negative oscillation as a distinct current due to functional activity. This current he termed the "current of action." This current of action is admitted by Hermann and Engelmann.

DuBois-Reymond's views, both as to the mechanism for the production of currents, and as to his electro-physiology, enormously as they have contributed to the advance of the subject, are vigorously denied by many authorities.

For my own part, it would seem that the rotatory molecules with their polar and equatorial differences of potential, imagined by DuBois-Reymond, would furnish an electric current upon a synchronous and symmetrical movement. But this current would not correspond to the constant current ordinarily observed in animals, but would resemble the shock imparted by electric fish. In the torpedo and gymnotus a series of disks is formed into columns, bathed in an albuminous fluid. The mass is muscular and contractile; when the columns lengthen or contract, their surface, in relation to the fluid, varies, and the potential difference of each in relation to the fluid is varied; the sum total of the varying potentials of several thousand disks and the fluid contiguous to each, is sufficient to produce the familiar shock, comparable to that received from a Leyden jar. The comparison to DuBois-Reymond's moving molecules seems to me to be a fair one.

Matteucci is the originator of the idea that chemical action in living tissues generates electric currents. Becquerel attributed these currents to osmosis, and has demonstrated that a constant current is established by almost any two fluids, differing in density or otherwise, and separated by a conducting membrane. The same view has been ably advanced by Trowbridge, of Harvard University. The well known Porret and Quincke phenomena are examples of the osmotic action referred to. The vast network of capillaries in the animal body furnish an admirable arrangement for osmotic generation of the current.

D'Arsonval attributes the current, that is to say, the difference of potential which give rise to it, to a change of form in the muscle—"the muscle, in contracting, diminishes its surface, which, as a consequence, becomes negative; on the contrary, in relaxing, it augments its surface, and this then exhibits a positive potential." [1]

Lippmann has shown that the changes of surface between two substances which have an action one upon the other are sufficient to determine a difference of potential, and consequent momentary current. Larat [1] has briefly but admirably summed up the chemical and physical views upon which are based a theory now gaining adherence. This theory, he remarks, "rests upon the chemical actions (Matteucci) or the physical (Becquerel) which take place in the tissues, under the influence of cellular life, actions which are completed by the faculty which organic tissues possess, in particular the nerves and muscles, of transforming directly electricity into physiological function.

"The organism, in this case, would be analogous to a thermo-electric pile, for example, with the difference, that the thermo-electric pile would receive heat and give out electricity, while the muscle receiving electricity would give out movement; the nerve, according to its function, motor impulses, or of sensation and trophic action.

"This last point, the transformation of energy by the living organism, has only lately come into science, it has not yet received sanction from actual proofs, and has not even been announced as clearly as I here announce it. But it is so in accord with all the other physical phenomena, it explains so well the therapeutical action, that it merits, at least, an attentive examination."

Confining attention for the present to the simple theoretical contention that the chemical exchanges, principally oxidation, incident to the life activity of the cells of the living organism, viz.: their metabolism, are the initial cause of animal electric currents, the question at once arises, granting that the potential difference is thus set up, how are the material parts so related as to constitute a voltaic couple? Obviously, in no such manner as described by DuBois-Reymond, but rather in the animal cell, which is the seat of the chemical exchanges, or in the relation of the cell to its electrolyte, the blood and lymph. To avoid any definite expression as to what actual parts of the cell and its environments constitute the voltaic cell, I have used the general term, protoplasmic foci, assuming, what must be granted, that if the currents exist, and if they are due to chemical exchanges, that corresponding protoplasmic foci must also exist.

As regards animal currents in general, it is found that, *a*, contracted muscle is negative to living muscle at rest; *b*, that cut surfaces are negative to sound surfaces; *c*, that excited parts are negative to inactive parts. These three fundamental facts of animal electricity are consonant with the point I wish to make in treatment. I will here merely point out that in physiological experiments, which demonstrate animal currents and polarity, the external circuit is the one commonly referred to, and that if a contracted muscle, a cut surface and an excited part is negative when tested in its external circuit, it is positive in its internal circuit, where the active chemical changes are going on. It is with the polarity of the internal circuit that we are are now dealing, though for simplicity it is often convenient to refer to the direction of a current rather than to the initial polarity. We may at this point advance the preliminary generalization that since the chemical energy of the tissues can undergo a transformation into heat, mechanical, electric, or other energy, this second form of energy can in turn be used to set up chemical affinity in the same tissues. Witness in physics the principles of the storage battery. The bearings of such a generalization as regards heat and mechanical force need not here be touched upon. Both affect the chemical exchanges of metabolism, and compared to electricity, the idea of polarity may be expressed in terms of heat and cold, and compared to mechanical force, in terms of its absence (rest) or its presence (applied mechanical force). Our principal interest now centres in pursuing the subject as regards electricity.

And, having built upon the view that the chemical

[1] Traité d'Électricité Médicale, par le Dr. G. Bardet. Paris, 1884.

[1] Précis d'Electro-Thérapie par le Docteur Larat, page 106. Paris, 1890.

activity of the living animal cell and its surrounding fluids may be responsible for the existence of animal currents, I propose two deductions: 1, A law of electro-therapeutics here developed; 2, a law of electro-physiology, to be developed in a second section of this article.

The law of electro-therapeutics is that *metabolism exhibits an electric polarity which may be opposed or coincided with by an applied extraneous electric polarity with the effect of respectively arresting or augmenting the chemical processes which produce the metabolic polarity.*

That we may expect to obtain alterations in nutrition, often referred to as trophic changes, by aid of the electric current will readily be granted. These effects have been carefully studied by Onimus and Legros, by Erb, Remak, Benedikt, and others. Such alterations, in the absence of any definite understanding of their nature, have been classed under the ambiguous term of catalytic effects, and are variously ascribed to electrolysis, vaso-motor changes, cataphoresis, and further unknown reactions in the intra-polar region. Were these obscure and inexplicable trophic effects the goal I desire to reach, I should not have attempted this contribution to the subject. The query I put is, Is there not some clue furnished by the actual processes of health and disease in living tissue which shall serve as a guide to treatment by electricity? The problem I would solve is to find some reliable basis on which to found our treatment—some explicable way out of the uncertainties among which we grope. It is this problem which I suggest may be solved by appealing to an electro-chemical basis of normal and morbid processes in living organisms, and upon this basis founding a special and invariable law which may serve as a definite guide to electro-therapeutics. To attain to this proposed solution it is essential to inquire further into: 1, The nature of the metabolic or chemical exchanges, their possible polarity, and the relation of these polarities to health and to disease; 2, the nature of the chemical effect of the current as to the characteristics of its poles; and to ask, 3, if the latter cannot be intelligently arrayed against the former to constitute a system of rational electro-therapeutics?

As thus presented, the crucial question becomes, in morbid processes, which pole shall be applied to a given focus of disease? Upon the answer to this question depends, I believe, the success or the failure of our treatment. To the lack of any fixed procedure in this respect, I attribute the great diversity in results obtained—results at one time brilliant and convincing, at another disappointing.

The Polarity of Metabolism.—Reverting to the fact that one transformation of the chemical energy of the process of living is into electric energy, we must admit that both physiological and pathological processes are, when such a transformation occurs, electro-motive sources or focuses. Such focuses are demonstrable in the well-known facts of animal electricity, and they are a probable accompaniment of all metabolic exchanges. And these electro-motive sources must be electro-positive, since every electro-motive source is, as I claim, and attempt to explain later on, initially electro-positive to some other electro-negative element (tissue) or portion of tissue, bathed in the same electrolyte. A striking comparison may be made to the zinc of the ordinary zinc-copper cell. In its internal circuit, the electric polarity and consequent current starts from the contact of the zinc with the electrolyte, and one result is the oxidation of the zinc; the initial cause of the appearance of electric energy is, as was stated when referring to contact electricity, the greater affinity of the oxygen for zinc than for copper, and, as long as the zinc and the oxygen last and an external circuit is provided, the electric energy will continue to be released by the exhibition of the chemical affinity between the two.

In the same manner, in the living animal body, heat and electric energy are the direct results of oxidation or combustion (katabolism), and the starting-point of this activity is an electro-positive starting-point. We have here the clue we are searching for; it brings us to the fundamental point I would suggest, and this is, that all active centres of living, of chemical affinity in living tissue, of metabolism, constructive and destructive, of physiological and pathological processes in living tissue; in short, all such centres of health and of disease are initially electro-positive to some other electro-negative portion of the same tissue or surrounding or neighboring tissue and media.

It is merely incidental to the above statement to restate as a basis of medical treatment by electricity that all active centres of disease are initially electro-positive. If this statement can be maintained to be true, it furnishes the physician with an exact basis of treatment—an element hitherto lacking in electro-therapeutics. Physiological experiment would seem to corroborate this view. Thus, as we have seen, excited are negative to inactive parts, the contracting muscle is negative to the muscle at rest; in other words, exhibits negative polarity (as does the zinc), which is equivalent to the statement that such parts are positive within the electrolyte, *i.e.*, in the internal circuit.

By means of the capillary electrometer, Waller [1] demonstrated an electrical variation in the human heart corresponding with the systole of the ventricles, and similar to the negative variation or action current, already often demonstrated in the lower mammalia. He assumed that negativity (positivity in the internal circuit) is the sign of functional activity. Bayliss and Sterling,[2] carefully repeated Waller's experiments. Taking the "wave of negativity" as an index of the wave of contraction, they found that the contraction was a single wave, passing from one end of the heart to another, the negativity at the base preceding that at the apex.

Health and Disease in their Relations to Metabolic Polarity.—The health of the individual or the tissue may be defined to be the stable equilibrium of tissue exchange, established between its intake and its output, between, on the one hand, the food and oxygen consumed, and, on the other, the excretions. This amounts to saying, that disease is a perversion of metabolism, meaning by metabolism, "the sum total of the chemical exchanges that occur in living tissue"[3] In health, the balance is maintained; in disease, it would range above or below this standard of stability; the chemical exchanges would be excessive or deficient, over-active or under-active, but in all events katabolic, destructive, oxidizing, and therefore electro-positive. What is true of the entire organism should be true of a part. It is at this point that the modifying (curative or non-curative) interference of the physician's extraneous electrical current can be exactly applied, and in the following manner expressed for the sake of simplicity in tabulated form:

All active centres of chemical exchanges (metabolism, health, disease) are electro-positive.	Metabolism, chemical exchanges over-active.	An applied + pole increases the activity, *i.e.*, augments the disease.
		An applied − pole decreases the activity, *i.e.*, cures the disease.
	Metabolism, chemical exchanges under-active.	An applied + pole increases the activity, *i.e.*, cures the disease.
		An applied − pole decreases the activity, *i.e.*, augments the disease.

In over-activity the negative pole, in under-activity the positive pole palliates or cures. The plan outlined is exactly parallel to what may be experimentally demonstrated with a primary battery, for instance, a zinc-carbon pair. The chemical exchange takes place at the zinc. This is electro-positive to the carbon; it is the zinc which is oxidized, or which, in other words, undergoes destructive metamorphosis, similar to what takes

[1] Annual Medical Sciences, 1891, vol. i.
[2] British Medical Journal, July 25, 1891, Report of International Congress.
[3] Halliburton: Text-book of Chemical Physiology.

place in an animal cell; the electro-motive source of the current is at the zinc; in cell or tissue nutrition a similar electro-motive source exists at the seat of active chemical exchange; as in the case of zinc and its electrolyte, so with the cell or cells and its or their electrolyte of blood or lymph, chemical affinity is transformed into the electric form of energy and a current appears. In the artificial battery we term it a galvanic current, in the animal battery we recognize it under the familiar title of animal electricity: there is practically no difference between the two except that the one is an artificial and the other a natural couple or battery. My plan of electrical treatment proposes to pit the artificial against the natural battery, just as one primary battery might be pitted against another. We may represent the parallel by the four following diagrams, illustrative of an equal number of possible treatments:

Fig 1

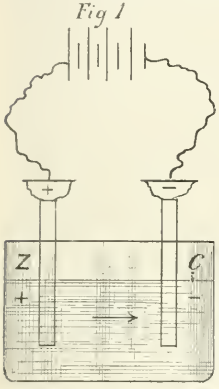

FIG. 1.—Metabolism or Chemical Exchanges Excessive. A + pole applied to the zinc augments the oxidation of the zinc, destroys it; applied to living tissue augments metabolism, augments disease.

Fig 2

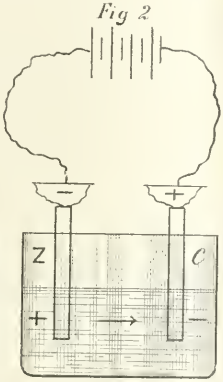

FIG. 2.—Metabolism or Chemical Exchanges Excessive.—A − pole applied to the zinc diminishes the oxidation of the zinc, restores it; applied to living tissue diminishes metabolism, restores tissue, cures disease.

Fig 3

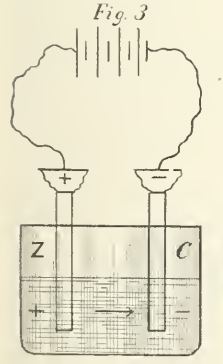

FIG. 3.—Metabolism or Chemical Exchanges Deficient. A + pole applied to the zinc augments oxidation of the zinc; applied to living tissue augments metabolism, cures disease.

Fig 4

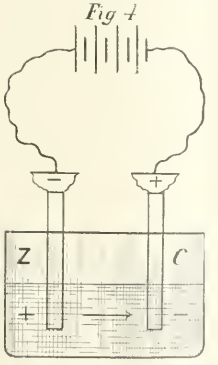

FIG. 4.—Metabolism or Chemical Exchanges Deficient. A − pole applied to zinc diminishes the oxidation of the zinc; applied to living tissue diminishes metabolism, augments disease.

In Fig. 3 the chemical exchanges are weak, but an applied + pole makes them stronger. In Fig. 4 the chemical exchanges are similarly weak, and a − pole makes them weaker.

If Figs. 1, 2, 3, and 4 be assumed to represent batteries applied to galvanic couples, it will be found that the large and applied battery, indicated by the conventional zinc-carbon characters, will affect the zinc of the couples in Figs. 1 and 3, reversely to Figs. 2 and 4. In Figs. 1 and 3 the zincs will be destroyed, the normal action of the couples will be augmented; in Figs. 2 and 4 the destruction of the zinc will be arrested, and not only arrested, but restored. And were the oxidation products in Figs. 1 and 3 insoluble and stationary, as in the case of two lead plates, we should have a storage-battery effect upon disconnecting our charging poles.

My theory, from an electro-therapeutic standpoint, is that the above laboratory experiment is repeatable within the human body, that similar effects to these above described are produced upon the chemical exchanges incident to the metabolism of a given focus of disease in a living tissue, and that to palliate or cure the disease the physician must first decide upon the pathological nature of the condition—whether the processes of nutrition of the part are excessive or deficient, and from one or the other standpoint apply an electrical polarity which shall, (*a*) diminish the chemical exchanges, or even reverse them, and thus restore and rebuild the tissue—the negative pole; (*b*) augment the chemical exchanges (disease)—the positive pole.

Having now established the fact that there are demonstrable electro-motive sources and electric currents in the human body, and referred to the probability of there being an infinitely greater number, owing to the chemical and physical relation of the parts, active but not easily demonstrable, both of which, actual and possible are initial foci of normal and morbid processes, and that these foci may serve as guides by reason of their electro-positivity to applying curative extraneous currents, it should at this place be made clear that the applied currents and polarities have the power of effecting in the intrapolar region those alterations of abnormal metabolism (chemical exchanges) which we desire them to effect. This mere physical fact is best established by a quotation from the distinguished physicist, Dr. Oliver J. Lodge, as follows:

"It may be asked, if the atoms in each molecule cling together by their electrostatic attractions, and there are an enormous number of atoms between two electrodes, how comes it that a feeble electro-motive force can pull them apart and effect decomposition; moreover, how can the electro-motive force needed to effect decomposition help varying directly with the thickness of fluid between the plates? It does not depend upon anything of the kind; the length of liquid between the electrodes is absolutely immaterial. This proves that throughout the main thickness of liquid no atoms are torn asunder at all. Probably they frequently change partners, one pair of atoms not always remaining united, but occasionaliy getting separated and re-combined with other individuals. During these interchanges there must be moments of semi-freedom during which the atoms are amenable to the slightest directive tendency, and it is probably these moments that the applied electro-motive force makes use of.

"The reality of such a state of continual interchange between molecules has been forced upon chemists by the facts of double decomposition. Such a fact is the interchange of atoms between strongly combined salts, when their solutions are mixed, so as to form very much weaker compounds, the proof that such compounds are formed being very clear in the case when they happen to be insoluble. The fact that a precipitate is formed whenever it is insoluble enough really proves that some small quantity of the corresponding compound is always formed in every case, whether it happens to be insoluble or not.

"The state of continual interchange results in a perfect sensibility to the migratory tendency of extremely weak forces, so that even the faintest trace of an electro-motive force is able to affect the charged atoms, on the average assisting the positive atoms down the slope of potential, and the negative atoms up the slope."

The fact that the most infinitesimal force is sufficient to effect its due quota of decomposition has been proved most clearly and decisively by the experiments of Helm-

holtz. We may not, therefore, doubt the power of our medical currents to effect chemical changes in the intrapolar region.

I have followed the general argument to what seems to me to be its legitimate conclusions, regardless of any preconceived idea as to treatment now in vogue. I am well aware that to follow this theory in practice will in numerous instances conflict with classical directions, while in other instances it harmonizes with results arrived at empirically. There is, at least, one satisfaction, it brings into prominence the fundamental basis of all intelligent therapeutics, and that is physiology and pathology.

And, in thus bringing forward a strictly chemico-biological electro-therapeutics, and its attendant index, polarity, I do not ignore the ordinary physiological effects of the continuous current, but I believe that electrochemical physiology may yet reach a stage of advance where these effects may be explained by the chemico-biological reactions occasioned in the intra-polar region by the electric energy. It is in line with this view that I have ventured these suggestions.

And though this study of intrapolar effects may suffer modifications on further experience, I believe that its main features will be found to hold good. These are that: 1. Disease exhibits polarity. 2. That this polarity may be augmented or counteracted by an applied current, and thus the disease be augmented or counteracted; and one result may be that the future electro-therapeutist will, by delicate tests, ascertain the polarity of the part to be treated by electricity, just as the chemist ascertains by litmus-paper whether his solution is acid or alkaline. 3. That should this polarity be thought to be due to other causes (circulation of fluids, osmosis, etc.), it may still afford a guide to electric treatment, by means of which counter or similar applied polarities may counteract or aid the causes, and thus counteract or aid morbid processes. Witness the antagonistic relations of Porret's and Quincke's phenomena.[1] 4. That this index of polarity may provide an invariable guide to treatment, and that thus electro-therapeutics may be reduced to an exact science.

II. Electro-Physiology.—The process by which Nature elaborates living tissue and by which the energy in food is converted into work, is of transcendent interest to the physician and to the physiologist. It is here suggested that the process is primarily through the medium of electricity, and not through the medium of heat.

Very little is as yet known concerning the molecular changes which occur during activity of either muscular or nerve tissue. Each undergoes physical and chemical changes. The physical changes of the muscle are a change of form, a rise in temperature, and a change in electric polarity (the contracted muscle is negative to the uncontracted); the most important chemical change is an acid reaction. The only known physical change which is associated with the activity of nervous substance is an electrical one (negative oscillation), and the only known chemical change an increase of acidity, as in muscular activity. Since so little is actually known, there has been, and is, ample opportunity for speculation.

Hermann, finding that no free oxygen is obtainable from muscle, concludes that complex chemical substances are formed in the muscle, and on contraction are decomposed; the muscular contraction is not due to direct oxidation, but the carbonic anhydride formed, as an end product, comes from the decomposition of this complex substance, which he terms inogen. Thus, though the chemical changes that take place appear as if due to oxidation, the oxygen is really set free from a prior combination. Bernstein refers the activity which results in muscular contraction not to the disdiaclasts themselves, but to the interstitial substance. He supposes each tagma to possess a positive polarity at its equator and a negative at its poles, and that it is depolarized at the moment of excitation. Collected at the pole is oxygen, and at the equator a carbohydrate, viz., oxidizing and oxidizable material; upon the union of the two there is synchronously a chemical explosion—heat and electrical change; that is to say, the sudden oxidation gives rise to the three functional characteristics of contracting muscle, motion, heat, and electricity.

[1] Ganot's Physics.

Concerning this theory Dr. Burdon-Sanderson, as quoted by Halliburton, remarks, "This view of the molecular structure of muscular protoplasm is in entire accordance with the theory of Pflüger, and with Engelmann's scheme of muscular structure. . . . It admits of being harmonized with the fundamental facts of muscle-electricity, namely, that cut surfaces are negative to sound surfaces, and excited parts to inactive, and it is not impossible to regard the three phenomena (chemical explosion, sudden electrical change, and change of form) as all manifestations of one and the same process—as products of the same mechanism."

A theory is here offered which assumes that the oxidation going on in living organisms goes on in protoplasmic parts of the tissue, organized into voltaic couples, producing primarily only heat and electricity in proportions varying with the adaptability of these parts to produce more or less of one or of the other, according to conditions of circuit, and that the electro-motive force thus generated forms at the negative element of the couple various complex chemical compounds whose decomposition produces not only physiological function, but is a second source of heat, and sets up the "current of action" or "negative oscillation." The primary electro-motive force corresponds to the "current of repose" of nerve and muscle, and it is this primary current which in a previous section of this paper, I have proposed to use as an index and guide by means of which to apply a similar or counter-current, and thus to augment or diminish it, and as a consequence, augment or diminish the nutritive chemical exchanges of health or disease which generates it.

In the electro-physiological theory here proposed, the course of events would be: chemical affinity of katabolism in living organisms undergoes metamorphosis into heat and into electricity; the electricity sets up a second and local chemical reaction, which in turn, upon decomposition, undergoes metamorphosis into motion or change of form of the part (muscular contraction), action of nervous substance (possibly again change of form), secretion (elaboration of chemical products), and electro-motive force, as in actual evidence in negative oscillation. It has often been maintained that physiological function was a direct transformation of chemical energy into function, due to the combinations of oxygen with the tissue; the theory now outlined implies that function is a transformation of chemical energy into function, due to the decomposition of complex chemical substances primarily formed by the electric action incident to katabolism. It assumes that the electro-motive force primarily generated by the body actually does the work which makes function possible. Heat, the other initial product of oxidation, is concerned in warming the water in food, in warming the air in respiration, is evaporated in the lungs by radiation and evaporation at the skin, and need not here be further considered. Bertholon has classified chemical combinations as exothermic and endothermic, according as heat is evolved or absorbed during the reaction. We will extend this classification to the evolution and the absorption of electricity, viz., to a capacity for absorbing energy which may under proper conditions be transformed into electro-motive force (as well as change of form and heat). That such an analogy is allowable is deduced from facts like the following: If one gramme of zinc be dissolved in sulphuric acid, 1,670 heat units are set free; but it is also true that if the solution take place in a voltaic cell the evolved energy takes the form of an elec-

tric current, and 2,973 coulombs are set free.[1] We may, therefore, perhaps be permitted to coin the words exo-electric and endoelectric reactions, for whether the energy set free or absorbed during chemical reactions take the form of heat or electricity would seem to depend upon the mere mechanical arrangement of the chemical substances involved in the reaction.

An example of an exothermic reaction is $H_2 + Cl_2 = (HCl)_2 + 44{,}000$ water gramme degrees, *i.e.*, heat (or electricity) is set free. But the reaction is endothermic in the instance $H_2 + I_2 = (HI)_2 - 3{,}060$ water gramme degrees, where heat (or electricity) is absorbed; or, as in hydrogen peroxide, $(H_2O)_2 + O_2 = (H_2O_2)_2 - 44{,}000$ water gramme degrees.[2]

It is obvious that the production of hydrogen peroxide absorbs a large amount of heat or electricity, and would set free an equally large amount of heat, or were the voltaic cell conditions established, of electricity, instead of heat.

Similar reactions may be supposed to take place in living tissue. In the ordinary reaction outside of the body, $Zn + O = Zn\,O +$ water gramme degrees, heat (or electricity) is set free. Within the body, the principal substances involved in the reaction are carbon, hydrogen, nitrogen, oxygen, and sulphur, which we may term briefly CHNOS compounds, in whole or in part, using these letters merely as a symbol representative of the vast variety of actual combinations.

Negative Oscillation.—To carry out our parallel to what takes place in an artificial cell, we will suppose that protoplasmic parts of the tissue have the voltaic arrangement, and that oxygen attacks the positive element, while hydrogen is directed to the negative element. The reaction is now supposed to be endothermic, and will read, $H + CHNOS = HCHNOS -$ water gramme degrees, heat (or electricity) is absorbed. We have now an unstable or explosive proteid compound at the negative element, which when it is decomposed sets free heat, or, since the voltaic arrangement exists, electricity. We may, for instance, suppose that a neural impulse causes the decomposition of this unstable compound, the electricity set free will have a direction opposite to the current which caused the combination, it will temporarily oppose and thus diminish or arrest this current, and we shall have developed the "negative oscillation" of Du Bois-Reymond, or the "current of action" of Schiff, a current, supposed by the former to be due to a weakening of the current of repose, and demonstrated by the latter to be a distinct current in an opposite direction to the current of repose, and due to functional activity. The explanation, as above given, would maintain that the negative oscillation is a distinct current, and a result of the performance of function, and the product, not of combination, but of decomposition of chemical substances.

Referring to the instability of the class of chemical compounds here referred to, Barker[3] says: "In accordance with the law that the tendency of the energy of a system is always toward a minimum, it is found that substances like hydrogen iodide, hydrogen peroxide, cyanogen, acetylene, nitrogen chloride, and the oxides of nitrogen and chlorine, all of which are formed from their constituents with absorption of heat—by endothermic reactions—are more or less unstable; being either spontaneously decomposable and even explosive, like nitrogen chloride and the chlorine oxides, or readily undergoing changes by slight external causes; but in all cases evolving heat by their decomposition. Carbon-disulphide, for example, is an endothermic compound; and Thorpe has recently shown that the shock of mercuric fulminate exploded in its vapor, decomposes it, depositing both carbon and sulphur. While, therefore, the formation of an endothermic substance cannot take place without the aid of outside energy, so, on the other hand, the decomposition of an exothermic substance cannot occur without this aid. An exothermic compound is therefore stable."

[1] Barker's Chemistry, 1891. [2] Ibid.
[3] Barker: Text-book of Elementary Chemistry, p. 77.

Endothermic compounds are not known in the usual voltaic cells, because CHO or CHNOS depolarizers are never used. But hydrogen might form on meeting CHNOS at the negative plate such an explosive compound, whose explosion or decomposition resulted in function. For, even in voltaic cells composed of metallic elements, the oxygen and hydrogen evolved at the two plates are in a nascent state, and exist at the plates, not in a free state, but in combination with the metals. This must be equally true of a protoplasmic voltaic cell, and we may thus have formed at the negative element, any combination of CHNOS of which hydrogen forms one constituent, as well as other compounds from which hydrogen has removed an oxygen atom.

We may represent a hypothetical, protoplasmic, voltaic arrangement and some of its reactions in symbols as follows, indicating in the first line a parallel to a zinc-copper cell. The reaction at the negative element is endothermic and endoelectric.

1.	2.	3.	4.
Zinc + O.	O separated from H_2.	H_2 + depolarizer.	Copper.
Protoplasm + O.	" separated from H_2.	H_2 + CHNOS.	Protoplasm.
Combination.	Decomposition.	Combination.	"
Energy set free.	Energy absorbed.	Energy absorbed.	"
Heat, Electricity.	.....	.....	"
Current of repose.			

It is the decomposition of the H_2 + CHNOS compound which produces the phenomena of functional activity, viz., nerve, muscle, and glandular action, and the current of action, viz.:

1.	2.	3.	4.
Protoplasm.	.....	H_2 + CHNOS, Decomposition, Electricity, Heat, Negative Oscillation or Current of Action, Function.	Protoplasm.

In the first tabulated reaction, the heat set free is detected and measured in the usual manner; the electricity or electro-motive force is evidenced by the signs of the current of repose, *but will give but slight evidence of its existence, since its energy is expended in the formation of the H_2 + CHNOS compound.* The heat and electricity are two prime and direct energies set free by oxidation, but all that relates to function is entirely the result of work first and primarily done by electricity. Thus, no exhibition of functional activity can be the result of primary oxidation.

This theory would claim that the inogen of Hermann, or complex chemical substances similar to it, is formed by electric action in muscle, and that all function was due to the explosion of substances also formed by electric action. We should thus have a muscle explosion, a nerve-cell explosion, a glandular or secretory explosion, or decomposition of combinations which were endothermic and endoelectric, and, as a consequence, endowed with the capacity of setting free their potential energies. Katabolism would be exoelectric; anabolism, endoelectric.

A tabulated form of description may perhaps outline these general points more clearly.

The Work of a Living Animal Organism.

- Primarily, by katabolism.
  - *a.* Heat, which undergoes no further transformation.
  - *b.* Electro-motive force, current electricity; detected by the current of repose of nerve and muscle, and occupied in storing chemical energy for purposes of function in muscle, nerve, and gland.
- Secondarily, or upon the exercise of function.
  - 1. In contraction of muscle.
    - *a.* Heat, secondary.
    - *b.* Electricity, current of action.
    - *c.* Change of form and mechanical work.
  - 2. In nervous impulses and functions of nervous substance.
    - *a.* Heat, secondary.
    - *b.* Electricity, current of action.
    - *c.* All action of nerve substance.
  - 3. In glandular activity.
    - *a.* Heat, secondary.
    - *b.* Electricity, current of action.
    - *c.* Secretion.

Thus, both electricity and heat are due to two sources, primarily to chemical combination (exothermic and exo-electric compounds), secondarily to chemical decomposition (endothermic and endoelectric compounds), the primary electricity storing up the energy which makes function possible, the secondary electricity being merely an accompaniment of function, and function itself would be a simple metamorphosis of the chemical energy of decomposition.

The view that electricity may act as the directing force which shall store up chemical energy which may again be liberated as energy, is exemplified in the modern storage or secondary battery. But the parallel is no more than a general one to illustrate the simple fact. The view here advanced, that a primary cell may store chemical energy at its negative element finds a more exact parallel in the polarization of primary cells. The hydrogen may be said to form a chemical compound, viz., the hydride of copper at the negative element of a zinc-carbon couple. Its initial electro-motive force is progressively weakened by the counter electro-motive force of the hydride of copper, until soon its action ceases. The two electro-motive forces are equally balanced.

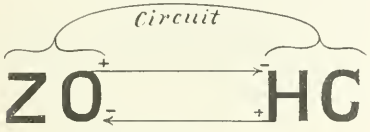

Fig. 5.—Balanced Electro-motive Force.

The hydride of copper, in forming, sets free electric energy, which flows in an opposite direction to the current which determines its combination. And did exactly this same thing take place in the protoplasmic voltaic elements I have supposed to exist, that is to say, if in the formation of the compounds which correspond to the hydride of copper, energy were set free (exothermic, exo-electric), the action of the protoplasmic couple, like that of the metallic voltaic couple, would come to a standstill.

It is at this point in the parallel that I invoke the fact of endothermic combination, or a chemical combination accompanied not by the liberation of energy, but by its absorption. Our knowledge of such combinations is due to the distinguished *savant*, Berthelot. Wurtz and Tomassi, while denying exo- and endo-thermic reactions, admit of a prior atomic combination corresponding to Berthelot's endothermic ones, but claiming that the final result is exothermic and not endothermic. We may thus validly claim an endothermic chemical arrangement of molecules at the negative element. It is this endothermic arrangement or capacity of new compounds to be formed with the absortion of heat which enables us to conceive of the building up in protoplasmic materials formed into voltaic couples, of compounds of hydrogen with the other elements of protoplasm, viz: carbon, oxygen, nitrogen, and sulphur, which are absorbers of energy. And it is these newly-formed compounds which I would claim may be the source upon their being decomposed, of a counter electro-motive force, similar in kind to that of ordinary polarization currents but differing in that they are not *continuously* counter, but only so at the moment of final explosion or decomposition. The fact that such combinations are endothermic, or absorbers of energy, permits of their formation; were they exothermic, or releasers of energy, they would bring the action of the couple to a standstill. The decomposition of such endothermic compounds releases energy and is a simple act of transformation of chemical energy into heat, electricity (current of action), and physiological function, viz: muscular contraction, nerve action, and secretion.

Summary.—1. The mutual relations of the two elements and the electrolyte of an artificial voltaic cell are also the mutual relations of protoplasmic parts of living organisms during the process of living. *a.* The oxidation of the positive plate of the cell (the zinc) corresponds to the destructive or katabolic chemical exchanges producing waste products—carbonic acid, water, etc., and liberating energy. *b.* The hydrogen or other bases acting at the negative plate correspond to the constructive or anabolic chemical exchanges, and store energy. *c.* The decomposition of the electrolyte corresponds to the decomposition of the animal electrolyte (blood, lymph, and other fluids). *d.* Oxygen and hydrogen are referred to not as the only reaction agents, but also as types of their congeners engaged in the complex chemical exchanges of living organisms.

2. The initial action of the protoplasmic voltaic arrangement is to produce only heat and electro-motive force or electricity. The latter is the "current of repose."

3. During functional rest of a given living animal area, the anabolic, constructive action or storage of energy goes on, and during functional activity the katabolic, destructive action, or releasing of energy goes on, as evidenced by their opposite polarities, positivity (in the internal circuit) being the sign of functional activity, and negativity (in the same circuit) the sign of functional rest.

4. What was a negative (anabolic) focus during rest, becomes a positive (katabolic) focus during activity. This conception of changeable electric relation is based upon the prior voltaic chemical relation, during which, in the complex chemism of living organisms, compounds of, for instance, hydrogen, carbon, nitrogen, or sulphur, are produced at the negative element with the absorption of heat. Such compounds in inorganic chemistry are termed endothermic; they are more or less unstable, easily decomposable or even spontaneously decomposable, or explosive. They evolve heat by their decomposition. They may also be termed endoelectric. In functional activity it is claimed that it is these unstable endothermic, or endoelectric substances, formed by protoplasmic voltaic action during rest, which are decomposed with production of an electric current in an opposite direction ("negative oscillation," or "current of action," and with the production of physiological function, viz.: muscular contraction, nerve action, and secretion). It may be presumed that a neural impulse, efferent or afferent, initiates the explosion. The superior power of the kathode in exciting physiological activity (including the phenomena of electrotonus) may be due to its increasing the already progressing formation of unstable or explosive material.

5. In addition to the storage material synthetized by the animal itself, and furnishing during functional activity an electro-positive plate, the principal electro-positive fuel or oxidizable tissue is furnished by the food assimilated by the animal, which food is the result of the anabolic, storage, or constructive faculty of the plant.

6. The origin and initiation of an electric current and consequent polarity cannot be from the electro-negative plate of the voltaic cell, but the current arises from the initial chemical action at the electro-positive plate and therefore the starting-point of living chemical exchanges is in the electro-positive plate—that is to say, is katabolic, oxidizing, or destructive. At the negative plate energy is stored or rendered potential. The same is true of all the energies. As a consequence, all metabolism, all chemical exchanges in living animal organisms are initially electro-positive, and if an anabolic, constructive, or electro-negative focus is found by tests it is not primary but accidental, and the result of the action of a conductively associated katabolic or oxidizing positive plate.

7. It follows, that morbid metabolism, constructive or destructive, is primarily electro-positive.

8. This invariable focal positivity provides an accurate guide to medical treatment by electricity, for the morbid

tissue focus itself may be regarded in the same light as an artificial voltaic couple. The reactions following may be experimentally demonstrated upon an artificial cell.

9. Morbid metabolism may be divided into (*a*) excessive chemical exchanges; (*b*) deficient chemical exchanges. In over-activity of the chemical exchanges (*a*) an applied positive pole will increase the activity, *i.e.*, augment the disease; (*b*) an applied negative pole will diminish the activity, *i.e.*, palliate or cure. In under-activity (*a*) an applied positive pole will increase the activity, *i.e.*, palliate or cure; (*b*) an applied negative pole will diminish the activity, *i.e.*, augment the disease. Two directions only are open for curative treatment: in over-activity the negative pole palliates or cures; in under-activity the positive pole palliates or cures.

10. If an electro-negative focus (here held to be secondary and incidental) is thought to be most desirable to be treated, the polarities indicated must be reversed. This theory implies that vital processes are electrolytic and electro-synthetic, plus a directive tendency which is a mystery; it implies that the processes of living proceed according to electric laws, releasing by the electro-chemical action of oxidation, combustion, or katabolism, heat and electric energies, with the production of waste-products of excretion, and storing or rendering potential the same energies by the electro-chemical action of anabolism, with the production of formed chemical products, essential, in the case of the animal, to its specialized existence—ferments, fats, glycogen, etc. It claims as a speculative postulate that the fundamental starting-point of both release and storage of energy, of the destruction and the construction of products, of katabolism and anabolism—of, in short, metabolism—is situated at protoplasmic foci consisting of protoplasm oxidized (or similarly attacked), and the oxidizing or attacking electrolyte of the protoplasmic voltaic couples—that the protoplasmic area attacked is therefore electro-positive, and that as a consequence of this initial action at the electro-positive area or element, a secondary constructive, storing, and anabolic chemical reaction is accomplished at a protoplasmic electro-negative area or element—in short, that anabolism is secondary to, and dependent upon, the initial katabolism.

The theory also implies that the animal continually dies that it may live—that its constructive metamorphosis is initially dependent upon its destructive; and more concisely, as regards the constructive, that it is due to the chemical union of substances set free at the positive element by oxidation and allied actions, or there receiving a determining, combining direction toward the negative element, and uniting with other substances at this negative element, antecedently oxidized or not—that, in short, katabolism and anabolism are inter-allied in an electro-chemical cycle, composed of protoplasmic voltaic couples, where katabolism initiates that movement which results both in waste products and in formed products, in released energies and in stored energies, in the currents of rest and of action, and which, when it ceases, is death of the part or of the whole.

It is this katabolic beginning, signalled by focal positivity, that we may hope to influence by an applied external energy, and thus influence those life-processes that underlie it; and since this initial katabolic centre, directly or indirectly, is the source of heat, mechanical force, electric energy, and of all the other phenomena of life, normal as well as morbid, we are in a position to suggest that this electric index of demonstrable and invariable electro-positive polarity is a guide which may enable the physician to thread the labyrynth of health and disease, and to apply a counter or an aiding energy in such a manner as to affect the normal or morbid phenomena by affecting their initial and underlying chemico-biological processes. As regards electric energy, it is believed that this may be accomplished in the manner outlined.

DISORDERS OF THE EARS IN TYPHOID FEVER.[1]

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In typhoid fever patients during the acute stages of the disease, one is not apt to direct special attention to the condition of the ears. Hence, special treatment of these organs is not usually attended to. This omission is in part explained by the fact that frequently no direct complaint is made by the patient of suffering in the ears, and because no special symptoms arise which seem to necessitate local interference. Moreover, even if the patient complains occasionally of annoying sensations in the ears, these feelings are frequently regarded as entering into the natural course of the disease, and as requiring no particular solicitude or means of relief. Again, not all general practitioners of the present day, even in our large cities, are familiar with otoscopic examinations, and for this reason are too prone to neglect them unless the situation becomes imperative and such investigation of the affected organ is urgently called for. And yet we are occasionally reminded, either during the early or later stages of typhoid fever, or after convalescence has been fully established, that neglect of accurate examination and treatment of the ears of a patient suffering with typhoid fever, has proven to be highly prejudicial to these organs later on. Many a case of permanently impaired hearing could have been prevented, doubtless, by a little judicious treatment employed during the first weeks of the disease. While this statement is true, I am not prepared to say that all cases of defective hearing following this malady are due to lack of suitable treatment when the aural symptoms were first manifest, because I know too well the gravity of the general affection. I do believe, however, that the number of sufferers from chronic partial deafness, as a result of typhoid fever, would be largely diminished if more care of the ears during its course were taken at the proper time.

Fortunately, relatively few cases of absolute deafness appear to be occasioned by typhoid fever; at least, such an affirmation seems partly warranted in view of Roosa's tabular statement in the chapter on deaf-muteism in his exhaustive treatise on aural diseases. In this respect, therefore, this fever has a great advantage over the eruptive fevers, diphtheria, and acute meningitis.

We must not lose sight of the fact, in this connection, that typhoid fever is a rare disease with very young children, particularly when compared with other acute febrile diseases of childhood. This being true, we should look for cases of absolute loss of hearing following typhoid fever rather among adults than children. Now, while I have seen the hearing very seriously affected after typhoid fever, I do not remember any instances of total loss of it thus occasioned. This, to my mind, does not argue necessarily less risk to the hearing in typhoid fever than in scarlet fever, or diphtheria, but it means possibly that better care of the ears in adult life has been taken both by the physician and the patient. Be that as it may, I hold that similar care of the ears should be taken during the acute period of disease, in cases of typhoid fever, as in that of the other acute febrile disorders, in order to be constantly on the safe side with our patients. In pursuance of this plan, we avoid occasionally very distressing complications and sequelæ. Inasmuch as the avoidance of impaired hearing as a consequence of typhoid fever pertains, in some degree at least, to the treatment of the nose and pharynx, the condition of these organs should be kept in view and, when required, proper means should be instituted to ward off possible aural complications.

There can be very little question, I believe, that either as a cause, or a concomitant condition, of the aural disorders of typhoid fever, the nose and pharynx often show

[1] Read before the New York Clinical Society, at a stated meeting held April 23, 1892.

evidence of more or less hyperæmia, accompanied with inspissated and occasionally fetid secretions, which by the proper and timely use of a mild detergent, or disinfecting spray, may be quickly and favorably modified, and with relief rather than increased annoyance, to an ill patient. It cannot be doubtful that judicious interference in this manner will prevent catarrhal otitis, at times, from becoming a prominent and disquieting symptom.

In the beginning of typhoid fever, the patient often suffers from various subjective aural sensations, like buzzing, whistling, ringing, humming, which occasion more or less distress. Later on these sensations, as a rule, diminish, or disappear; occasionally, they become more intense and have a graver pathological significance. They are said by some authors to last and to be more pronounced in the more serious forms of the general disease.

Accompanying the noises in the ear, the patient may accuse more or less local pain in these organs. Whenever pain is notable, it almost invariably shows a certain amount of acute local inflammation, either of the external auditory canal, or more probably of the middle ear itself. Under these circumstances an otoscopic examination should be made. At times, impacted cerumen is the sole cause, apparently, of distress, and when this is removed from the ear, and a few subsequent syringings with warm water have been made, the local pain and distress wholly subside. On other occasions, the drum membrane is obviously acutely inflamed, and this local inflammation sufficiently accounts for the pain and tinnitus. The inflammatory condition of the drum membrane, if properly attended to, may last only a few days, getting better gradually, and never terminate by suppuration and perforation. In other instances this fortunate termination does not take place, and despite our best care one, and rarely both, membranes give way sooner or later, and the ensuing discharge is more or less prolonged.

Not always do we meet with painful sensations as an evidence of acute aural inflammation in typhoid fever, and occasionally a perforation may occur in a sudden manner, without any abnormal sensations being accused by the patient. Thus we are not put on our guard, as it were, against the impending complication. No doubt this occurrence is frequently explained by the general condition of the patient, who is already suffering from the depressing and stupefying effect of the constitutional disease upon his central nervous system, and his appreciation of sensory functional disorders is far less acute than it would be in a normal state. We must remember, in this connection, that while aural pain, inflammation, and perhaps perforation of the drum of the ear may occur in the early days of typhoid fever, yet usually it is only about the end of the second, or during the third week, or later still, that these complications arise. From what I have said in regard to the possibility of a perforation of the drum membrane occurring suddenly in typhoid fever, and after very slight, or indeed no local sensations of pain, it follows that the careful physician should frequently inspect the membrana tympani of his patients, especially after the second week of the disease and up to the time of complete convalescence, even though no painful or other abnormal sensations are accused in the ears. These examinations, in my judgment, should be made daily, or every other day. They may fortunately remain negative, but if well-marked evidences of inflammation are discovered, the proper remedial measures should be immediately instituted. If this be done and perforation of the drum should follow, or if indeed, without perforation, the hearing becomes later on permanently impaired from middle ear disease, or an affection of the labyrinth, we can feel, as careful physicians, that we have done our best to ward off or prevent such an unfortunate occurrence. According to Louis, pain in the ear may last a long while, as much as fifteen days, he says, without suppuration taking place.[1]

[1] Nouveau Dict. de Médecine et de Chirurgie Prat., t. 36, p. 639. Paris, 1884.

This, I presume, is a correct observation in some cases and in some epidemics. But in many instances, I am confident that, long before this time has elapsed, perforation of the membrane will take place unless remedial treatment be begun. In any case, I should regard the practitioner as highly culpable who neglects his patient to the point of confiding to any such happy-go-lucky method as trusting hopefully to the possibility of suppuration being delayed such a length of time, and for this reason failing to make a searching diagnosis and subsequent careful treatment of any case in which, during typhoid fever, notable pain is accused in one or both ears. Deafness to a certain degree, at least, is certainly very common during typhoid fever, and when it occurs is apt to be very persistent. In this respect we must recognize a difference between the effect of typhoid fever upon the eyes and ears, for the former are not often or seriously injured by this malady. Whenever deafness occurs, it may affect one or both ears; in the latter case, particularly, it is due either to the propagation to the Eustachian tubes of the pharyngeal catarrh, or is in part attributable "to the blunted sense perceptions incident to the action of the poison"[1] of the disease. While the impaired hearing or deafness in typhoid fever has some evident direct relationship at times with the condition of the central nervous system, yet the precise connection between the two cannot invariably be determined in any accurate manner. In the first place, this symptom is often pronounced before the stupor has become very profound; and again, the impairment of hearing goes on to almost complete deafness without our being able to determine the interdependence between this loss of function in a special sense and cerebral accidents, notably delirium. Very marked deafness in some cases apparently lends nothing to the gravity of the prognosis. It is possible, however, even in the innocent cases, that it may be in some way connected with the duration of the disease, as it has been stated by some writers, and the more marked the deafness, the longer time the typhoid fever will last. On the other hand, I cannot agree with the affirmation that deafness in typhoid fever should be regarded as a happy index in a bad case, or with Fracastor, who has accorded to it invariably a favorable significance.[2]

Deafness of both ears, according to Wilson, was at one time looked upon as a favorable symptom, but the closer investigations of more recent observers show that this opinion is no longer tenable. The probably correct explanation of this notion, formerly received, is as follows: If both ears be affected, it means as a rule a mild extension of the catarrhal process from the pharynx to the ears; if one ear be implicated, it means that the prognosis is more regretable, because the extension of the catarrh to one ear has occasioned a purulent otitis, which may be followed by grave sequelæ. Such, at all events, was the distinction made by the famous Trousseau in his Clinical Lectures,[3] and such seems to me, even at this day, to be a satisfactory solution of a time-honored belief. In this connection Murchison[4] says, "deafness is favorable when contrasted with the opposite state, or intolerance of sound, which is sometimes met with." Oppolzer, who has searched for the pathogenic conditions of the symptom deafness in typhoid fever, recognizes for it three distinct causes: the first and most frequent is the propagation of the catarrhal process from the pharynx to the Eustachian tubes; the second is, rarely, the influence of the affection of the central nervous system, incident to the profound blood dyscrasia; the third is periostitis of the middle ear. The latter pathological condition is most frequently of metastatic origin.[5]

Murchison (p. 177) recognized the difficulty at times

[1] Wilson: The Continued Fevers, p. 166. New York, 1881.

[2] "Surditas salutem portendit" (Fracastorius, 1546). "Deafness is rather a favorable symptom in typhus" (Alison, Edinburgh University Lecture, 1849, not published). These citations are taken from Murchison, and contained in a footnote on p. 177 of his treatise on Continued Fevers. B. R.

[3] T. I., p. 170. Paris, 1861. [4] On Continued Fevers, p. 177.

[5] Nouveau Dict. de Méd. et Chir., t. 36, p. 639.

of giving a satisfactory explanation of the deafness in typhoid fever. He remarks that, "it is far too common, and often too complete, to be due to accumulation of wax, or to the swelling in the fauces, and it certainly is quite independent of the administration of large doses of quinine, as suggested by Barallier." Later observations of Roosa, Hammond, Weber, Liel, and others, show emphatically that in some instances, at least, quinine is most prejudicial in its effects upon the ears, when given in large and continued doses. Quinine undoubtedly congests the drum membrane in the most marked manner, and may occasion inflammation of this organ which shall prove lasting and injurious.[1]

Orne Green[2] quotes Roosa's views and their corroboration by Kirchner with approbation, and states: "From our present knowledge, both clinical and experimental, we are justified in asserting that the action of quinine upon the ears is to produce congestion of labyrinth and tympanum, and sometimes distinct inflammation with permanent tissue changes."

In regard to the cause of deafness, "Dr. Stokes thinks that the muscles of the ear, like those of the body generally, become softened, so that they no longer maintain the conditions necessary for the proper communication of the atmospheric vibrations to the inner chambers." Murchison does not subscribe to this opinion, and adds (p. 177), "on this view it is difficult to understand the cessation of deafness with convalescence."

Otorrhœa in typhoid fever is more frequent among children than with adults, and is also more likely to be followed by some of those disastrous cerebral consequences which occasionally take place. If the internal ear becomes inflamed and suppurates, meningitis may follow. Examples of this kind are recorded or referred to by Louis,[3] Peacock,[4] Wilson,[5] and Murchison.[6]

It is also true that consecutive deafness in these cases is frequently due to labyrinthine otitis (Duplay). Caries of the petrous portion of the temporal bone has been recognized as the occasional cause of suppurative meningeal inflammation. Abscesses of the brain, either in the temporo sphenoidal lobe, or in the cerebellum, not infrequently follow a similar pathological condition. Thrombosis of the cerebral sinuses, suppuration of the mastoid cells, erysipelas and pyæmic abscesses in different organs are among the late and terrible accidents which may occur in connection with caries of the petrous portion of the temporal bone. Cases have been reported, however, in which acute suppuration of the middle ear has been attended by septic meningitis and death, and yet the autopsy showed no involvement of the temporal bone.[7] It is possible, therefore, in some cases of this kind following typhoid fever, that cerebral complications may result from the process being carried to the nervous centres through the medium of the general circulation. Apart from these complications, the middle ear, during convalescence from typhoid fever, may become the seat of interminable suppuration which finishes in rare instances by causing complete deafness. This sad sequela, when it has occurred in children of tender age, has also in a few recorded instances become the origin of deaf-muteism. This disastrous consequence may not be immediate, but may come on by degrees and slowly. Little by little, the sense of hearing disappears entirely, and in time the power of speech is also forgotten. The vocabulary, small perhaps to begin with, is gradually lost, and even before this ultimate stage is reached, the pronunciation of such words as may still be remembered becomes extremely defective. The deaf-muteism thus acquired at an early age may be complete and lasting, and the child may be unable to talk throughout the course of his life. Fortunately, however, during the past few years, and owing to a more advanced system of education for these afflicted beings, deaf-muteism should not be regarded at the present time as wholly irremediable, since, in some instances at least, speech, if not hearing, has been restored.

The frequency of aural disturbances, or aural complications, in the course or as a sequel of typhoid fever, is very difficult to determine accurately, and in any event differs with the observers, the country, and the epidemic. The statements made by different writers cannot always be satisfactorily compared with one another. First, because the histories were not always recorded under similar conditions; sometimes they were those of hospital patients, sometimes of patients seen in city practice, or they were cases of soldiers attacked with fever during an active campaign. In some instances they were adult cases, in others children only were affected.

Manifestly, these various individual or ambient conditions must, to a certain degree at least, vitiate comparisons that have been made. As regards the mere question of complication, not everyone is agreed as to the precise definition to give to the word, and in particular as applied to the ears. Finally, it is obvious that in certain epidemics aural inflammations will be more frequently met with than in others, and even in the same epidemic of typhoid fever we are apt to notice differences in this respect, at its beginning or toward its decline. According to Murchison,[1] deafness of one or both ears was noted in 20 out of 46 cases; Louis observed it in 58 of 99 cases; Barth, in 36 of 129 cases; and Jenner, in 6 of 23 fatal cases. With respect to the presence of aural complications, the following citations may be interesting: Stricker mentions 34 cases of otitis among 172 cases of typhoid fever; Jessen, out of 186 cases of typhoid fever, gets together 13 cases of suppurative median otitis; Hoffmann has been able to state in 4 instances (at the autopsy) perforation of the drum membrane in 250 cases.

It is, therefore, obviously the duty of the medical attendant in a case of typhoid fever to examine the ears occasionally with the otoscope, even though there be no complaint by the patient of pain in the ears. This duty is more imperative during and after the second week of the disease than previously, on account of the possibility of serious aural complications at this time. The obligation of the physician in this regard is not less formal, because the general condition of the patient is such as to prevent him from appreciating any local distress unless it be excessive, and because for this reason he is unable himself to sound the note of warning to the family physician. Not only should the membrana tympani be inspected, but the nose and throat must always be looked at by means of a nasal speculum, or tongue depressor with a suitable light, either daylight or that reflected with a head-mirror from a lamp or candle. Sometimes the external auditory canal is found obstructed with wax. This should always be removed in order to make the satisfactory inspection of the drum membrane, and also to get rid of an accidental cause of possible inflammation.[2]

If, after removal of the impacted cerumen, the membrana tympani is red and inflamed-looking, we must order it to be douched two or three times daily with the fountain-syringe containing water at 100 to 110° F. This is readily accomplished with a patient in a semi-recumbent posture and without wetting him, by bringing the patient near the edge of the bed and then tying a piece of rubber sheeting around the neck, so as to allow the water to run into a vessel on the floor. The addition of half a teaspoonful of bicarbonate of soda or borax to each pint of water will be useful in allaying inflammation. From

[1] Diseases of the Ear, Sixth Edition, p. 619 et seq. New York, 1885.
[2] Boston Medical and Surgical Journal, vol. cviii., p. 220.
[3] Recherches sur la Fièvre Typhoïde, 2me ed., vol. ii., p. 92. Paris, 1841.
[4] On the Treatment of Fever by Repeated Doses of Quinine, Medical Times and Gazette, xiii., 1856.
[5] The Continued Fevers, p. 191. [6] Loc. cit., p. 564.
[7] MEDICAL RECORD, September 26, 1891, p. 368.

[1] Loc. cit., p. 543.
[2] Of course, I am aware that the mere existence of impacted cerumen is prima facie evidence of previous aural inflammation. There is, therefore, still more necessity to remove it, lest it cause additional disturbance.

one to two quarts of hot water must be used from the douche-bag on each occasion that the ear is irrigated. Frequently, after half a dozen washings the inflammation will have notably diminished or completely disappeared. If at the time the ear is seen to be inflamed, there is evidence of nasal or pharyngeal catarrh, I consider it advisable to make use of a mild detergent, or disinfecting spray, through the nose and into the back of the throat, twice daily for a few days. This spray may be that of Dobell, a spray formed with one of Seiler's tablets, or a solution of bichloride of mercury, 1 part to 5, 8, or 10,000, according to circumstances.

In many instances, by carrying out these simple measures during a few days, a purulent otitis may be avoided. If the drum-membrane continues to show evidences of decided inflammation, or if, indeed, pain continues as stated by the patient, it may be advisable to apply one or two leeches in front of the tragus, even though the patient's general condition might not altogether favor such treatment. Better have a little local blood-letting with a possibility of slight weakening to follow, than the advent of a complication the end of which cannot be foreseen, and may be a source of discomfort or great annoyance throughout life.

Indeed, in some instances in which the inflammation does not subside rapidly under the action of repeated douches, or in those where it is unwise seemingly, on account of great prostration of the patient, to make use of local blood letting, further "injury to the deeper parts by extension of the inflammation"[1] may be prevented by an incision through the membrana flaccida with a paracentesis knife. Frequently, great relief follows this slight operation by liberating the pent up secretions. With an unruly child, however, in order accurately to stab the drum-head and to save pain, it is indicated to give an anæsthetic. Subsequently, little or no treatment is required, except occasional douching and cleaning the ear, followed by inflation of the drums after a few days, according to Politzer's method. If suppuration has already occurred, or come upon us, as it were, unawares, despite our careful attention and watchfulness, the preceding plan of treatment is quite as necessary as in the previous case. Sometimes the suppuration will be arrested quite rapidly, and we would feel gratified by the fact, were it not that in just such instances grave disturbance is apt quickly to follow, and instead of the fact to which I refer being considered one that indicates rapid recovery, it is a symptom ominous of evil and which forebodes serious central nervous disease.

Murchison speaks in the following terms of this fact: "I have known rigors, high fever, intense headache, and delirium, and even convulsions, occur during convalescence, and cease at once on the appearance of discharge from the ear."[2]

Pyæmia and thrombosis of the internal jugular vein may result from such cases. In order to ward off these deplorable complications, trephining the mastoid process, and even opening into the lateral sinus, may become necessary. The soft tissues over the mastoid may not be much swollen and be only moderately painful on pressure. The neck in the vicinity of the process, however, is usually infiltrated and tender, and the patient may be hoarse, and experience some dysphagia. If the operation be delayed too long and pyæmia be already present the lungs and liver may offer signs of the existence of metastatic abscesses. If the mastoid process be trephined, an exit will be afforded to pent-up, cheesy, fetid-smelling pus. The opening of the lateral sinus, as in the case of Keen,[3] may be followed immediately by profuse hemorrhage, which should be arrested by means of instant plugging with iodoform gauze. If the suppuration occasioned by the otitis media continue indefinitely, and despite the use of astringent solutions of zinc, alum, etc., this condition should be treated for a while with insufflations into the drum-cavity of finely powdered boric acid. Unfortunately, this dry treatment will also at times fail to effect a permanent cure. Not only will the boric acid insufflations not invariably arrest the otorrhœa, but they may prove to be directly detrimental to the patient by interfering with proper aural drainage. Thus the pus may be dammed back in the affected ear and septicæmic symptoms may be induced. The latest and most approved method of treatment in these cases, according to some advanced aurists, is to obtain and maintain perfect drainage in the best available manner. This method, according to them, is "by excision of the membrana tympani and the two larger ossicula, or their remnants."[1] According to others, every such case "should be treated by free opening of the mastoid antrum and the establishment thereby of thorough means of irrigation and drainage; and if that should not prove sufficient, by exposure of the dura mater both above the tympanum and in the neighborhood of the lateral sinus."[2] More or less similar operations to the foregoing have been successfully performed by H. Knapp, C. J. Blake, and B A. Randall,[3] in numerous instances of mastoid disease of different origin.

In this connection, however, "it must be remembered, that considering the enormous number of people who have perforation of the drum, comparatively few die of 'brain disease,' and they will go through life, hampered it may be, yet safely and well, by the employment of the milder remedies"[4] to which I have previously referred. To prove this, permit me to read the following citation: "Among 13,000 patients treated at the Aural Clinic of the Berlin University, brain abscess was found eight times in two and one-half years. The mastoid was opened thirty-five times in the same period. One case of cerebral abscess occurred among 2,650 cases of acute suppurative otitis, with 149 operations on the mastoid; 6 chronic abscesses in 2,500 chronic suppurations of the ear, with 206 operations upon the mastoid. In the 149 acute cases in which the mastoid was opened, pachymeningitis was found 49 times; in the 206 chronic cases, 34 times. In 14 cases, thrombosis of the transverse sinus was found, usually with sepsis and pyæmia."[5]

Enough has been said, I believe, to show the great importance of my subject. In my judgment there are few more so in connection with the management of typhoid fever. A full appreciation of its gravity, and an accurate knowledge of the means which should guide our treatment, are not uncalled for.

In conclusion I would add, that, so far as I know, the aural complications of typhoid fever have never been thoroughly studied by anyone competent to observe and record these cases. By this statement, I merely mean that the general practitioner, into whose charge the patient naturally comes, does not use special instruments and is deficient in special knowledge of aural conditions when disease exists. The specialist only occasionally sees such cases when they are particularly severe, and does not follow them from day to day, as is essential to note what changes frequently occur, and what treatment is most efficient as these changes arise. Later, when the aural disease remains in the convalescent period of the fever, great damage has already taken place, and the hearing is much and permanently impaired.

My few imperfect observations, and bringing together recorded data, may have, therefore, a more than passing interest, and I only trust they will lead someone to make careful and more complete observations in a far larger number of cases than those I have been able to study.

[1] Sexton: New York MEDICAL RECORD, February 7, 1891.
[2] Murchison: On Continued Fevers, 3d edition, p. 207. London 1884.
[3] Philadelphia Times and Register, December 10, 1890.

[1] Burnett: American Journal of the Medical Sciences, vol. cii., 1891, p. 422.
[2] R. Glasgow Patterson: Dublin Journal of Medical Science, July 1, 1890.
[3] New York MEDICAL RECORD, September 26, 1891, p. 368.
[4] A. Marmaduke Sheild: London Lancet, July 25, 1891, p. 163.
[5] Berl. klin. Wochenschr., No. 49, 1891; and The Review of Insanity and Nervous Disease, vol. ii., p. 311, March, 1892.

TREATMENT OF YELLOW FEVER IN BRAZIL.

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The treatment of yellow fever during the recent epidemic of 1891–92, in Rio de Janeiro and Santos, Brazil, has been characterized by the introduction and adoption, by a few of the more advanced Brazilian practitioners, of a more rational method of treatment than has been in use heretofore. The ill success of the old method has induced a few of them to try the more modern hydropathic measures, which have been so successful in the treatment of typhoid fever; and they have been gratified to see a greatly reduced death-rate as the result of the innovation.

Notwithstanding the fact that the pathology of the disease is but little understood, the Brazilians have not been content to treat the fever symptomatically until the light of positive knowledge shall show us a shorter way, but have made the mistake of vainly searching for some empirical remedy that would abort, or shorten, the course of the fever; ignoring the support of the patient, overlooking almost entirely the necessity of making an effort, at least, to check the vomiting, and remaining totally oblivious of the fact that a little at least may be done toward checking the suppression of urine. The results attending their methods have been more or less successful from year to year, in a direct proportion to the benevolence or malignancy of the successive epidemics.

Many different methods have been in use. The method of longest standing is that which may be called the calomel treatment, and until a few years ago it was the only treatment in vogue, and even now is extensively followed by some of the older practitioners. The mild chloride of mercury was administered in small doses to the point of salivation, and often its administration is even then not checked. What they expected to accomplish by this nobody can tell. It was given because it was deemed, empirically, to be the proper and only remedy. Of late years, however, it has been largely abandoned, and the method most generally followed is probably that of Freire, who is regarded in Brazil as authority on the subject of fevers. He advises the production of extreme cinchonism by the administration of quinine sulphate in large doses, and argues that this should be pushed to extreme limits during the stage of remission, or the second stage, and that by so doing the fever will often not advance to the third stage, or that of exacerbation, but that the temperature will fall to the normal point with the termination of the second stage; convalesence beginning immediately. Or if it does progress to the third stage, that it will not be severe, the so-called "black vomit" not appearing at all, and but very little diminution taking place in the quantity of urine excreted, and the quantity of albumin not being over ten per cent. at any time.

In the type of fever known in Brazil as "Febre amarilla benevolencia" (benign yellow fever) this plan of treatment acts very well, for the result obtained very nearly coincides with the natural clinical history of this type of fever. But as the malignancy of epidemics differs very greatly from year to year, it so happens that during some epidemics this treatment is very successful; in other seasons, however, when a more severe type of fever has prevailed, it has been very unsuccessful, and a high rate of mortality has existed. The poor success of this plan of treatment led to the adoption of certain modifications and additions, and it was proposed to induce an intense diaphoresis in conjunction with the administration of the quinine, this being continued for several days at stated intervals. The underlying idea of this treatment was that it would relieve in some measure the intense congestion of the alimentary tract, that it would stimulate the excretory powers of the skin, and thus relieve the kidneys of a part, at least, of their burden, rendering them less likely to become inflamed, and increasing the chances of the patient for recovery. Counter-irritation was maintained by sinapisms applied to the epigastrium, the calves of the legs, and the soles of the feet. Although the thirst is intense, hot drinks only were allowed, that the promotion of diaphoresis might not be interfered with. This treatment, though seemingly good in theory, has been found to be very unsatisfactory, if not positively injurious, in practice; only extremely robust constitutions are able to withstand it. The extreme weakness produced by such constant sweating, the nervous irritability generated by the heat and weight of the blankets, the restlessness from an intense thirst, in no degree quenched by the hot drinks constantly administered, added to the natural tendency of the disease to rapid emaciation and devitalization, leaving the patient in a condition so weak that he collapses from exhaustion or dies from loss of blood which is thrown from the stomach with each effort of vomiting, and which efforts the patient has no longer the power to resist.

The great mortality attending this treatment seemed to indicate that either the therapeutic indications had not been properly interpreted, or that the correct treatment to meet the indications had not been found; and especially has this seemed to be true, when we remember that yellow fever in itself is a self-limiting disease, with a tendency to result in recovery if only we are able to protect the patient from death from exhaustion. This fact has led some few practitioners to abandon this style of treatment altogether, and to manage their cases entirely upon an antipyretic and symptomatic basis. And now, in the hands of many practitioners the temperature is controlled entirely by the application of cold in some form, and we find sponging with cold water, iced water, or tepid water, as the case may indicate, graduated baths, and cold baths in frequent use. What little has been done in this line, however, has been done in the face of the greatest opposition from the Brazilian people, who still regard the use of cold water in fevers as highly injurious, and the word ice in the same connection as synonymous with sudden death.

It is better not to try to divide the treatment into stages corresponding with the stages of the disease, but to bear in mind constantly the indications for treatment, which are, to lower the temperature, to prevent vomiting, and check the extravasation of blood, to prevent the suppression of urine, to nourish and stimulate the patient.

The patient should be placed in a light and airy room, where an abundance of fresh air may be at all times found, and where ventilation is unobstructed; should be clad in a thin night-gown only, and with nothing more than a sheet and a coverlet for bed-clothing. As soon as it is possible, after the initial chill, a mild cathartic should be administered—calomel, grs. v., is usually given, and followed by castor oil, oz. j. to iv. to clear the intestinal canal of its accumulation of fæces, as constipation usually exists before an attack. As the taste of the latter drug is somewhat nauseating, and as there exists a strong tendency to vomiting from the very beginning of the attack, great difficulty is sometimes found in retaining the oil, but this difficulty can usually be obviated by floating it over a small quantity of lime- or lemon juice, which being swallowed after the oil, entirely removes the taste from the mouth.

Although the pain in the head and back, which ushers in the disease, is most excruciating, opiates must not be given. Opium and its preparations are contra-indicated by reason of the tendency to diminish the quantity of urine. An attempt at alleviation is sometimes made by the hypodermatic injection of small doses of belladonna, but usually it is of very little benefit. The temperature is best controlled by the application of cold. Sponging every four or six hours with cold or iced water has been found to be not only beneficial in reducing the temperature, but also in preventing the patients from falling into that general apathy which is characteristic of fatal cases of yellow fever, and from which it is almost impossible to arouse them, once they succumb to it. Cold and graduated

baths are superior to sponging, but are rarely attainable. An ice-cap applied at intervals to the head is very grateful to the patient. A great deal of success has also attended the practice of flushing out the colon with cold water. Not only does it act as an efficient antipyretic, but also constantly washes out the lower bowel, preventing the accumulation of the products of retrograde metamorphosis and the possible absorption of the ptomaines produced thereby, but in addition imparting a tonicity to the walls of the intestinal blood-vessels, reducing the liability to the extravasation of blood, so often the cause of death in the so-called "black vomit" and "tarry stools."

The attempt has been made to establish an intestinal antisepsis by the addition of "boric acid," "beta-naphthol," "creosote, and carbolic acid" to the clyster, but no marked results have as yet been observed. Antisepsis by way of the mouth has also been attempted, and salol, iodine, creosote, carbolic acid, have all been administered; the bichloride of mercury in minute doses has also been largely used, the so-called Sternberg's solution being given every four hours.

℞. Hydrarg. chlor. corros. ..... gr. ijss.
Sodii bicarbonatis. ..... ℥ ij.
Aquæ destillatæ. ..... q.s. ad ℥ xxxij.
M. et Sig.: One teaspoonful every four hours.

It is very questionable, however, in the minds of many, whether the result desired is obtained, and whether the administration of this remedy does not often produce more irritation to the stomach than compensating benefit is derived. No particular difference has been noticed in the clinical history of two parallel cases, in one of which it was administered and in the other not.

The control of the vomiting is the most difficult problem to be solved. And it is one of so great gravity that if its solution is not reached, the death of the patient will inevitably follow. Ice is one of the most valuable means at our command, in this connection. Small pieces of cracked ice swallowed from time to time are often successful in checking it.

Copious draughts of iced water often subserve the same purpose, and small doses of champagne, iced very cold, and repeated at frequent intervals, will at times be successful where all else fails. Often, too, on the other hand, heat will check the vomiting most successfully in those cases where it is caused by the oozing of blood through the vessel-walls into the stomach. The hot water, by checking the oozing of the blood, checks the vomiting secondarily by removing the cause. Sometimes equal parts of camphor and chloroform will exert a benificent influence.

℞. Chloroform,
Spts. camphor ..... āā ℥ j.
M. et Sig.: Give six drops in one ounce of water, every hour.

Cocaine hydrochlorate, in a menstruum of fluid magnesia, by producing a partial anæsthesia of the gastric lining, and possibly by diminishing the extravasation of blood by partially contracting the blood-vessels, is of considerable merit, and is found to be most successful in those cases which are characterized by a tendency to "black vomit."

The following is the formula for this mixture:

℞. Cocaine hydrochlorate ..... gr. j.
Fluid magnesia. ..... ℥ ij.
M. et. Sig.: Give one teaspoonful p. r. n.

Sometimes when all ingesta are immediately rejected, and the stomach evinces such extreme irritability that even water is refused, the hypodermic administration of citrate of caffeine will be effective.

℞. Caffeinæ citratis,
Sodii bicarbonatis. ..... āā ℈ ss.
Aquæ destillatæ. ..... ℥ jss.
M. et Sig.: For hypodermatic use.

Often, too, when all medicine fails to render the desired effect, it may be obtained by the application of an ice-bag or an ice-water coil to the epigastrium. It must be immediately and firmly applied with each repetition of the desire to vomit. And when this alone is ineffectual, it will sometimes be successful if used in conjunction with a simultaneous ingestion of cracked ice, iced water, or iced champagne. It sometimes happens, however, that none of the medicine or the application of cold or heat will check the vomiting, everything tried has no effect, and the patient becomes weaker and weaker until death takes place from exhaustion or loss of blood. These cases seem to be hopeless from the beginning, and no matter what may be done or tried, no reaction can be produced. In cases characterized by much extravasation of blood, the tincture of the chloride of iron is given for some time after the vomiting has been controlled.

The kidneys require close attention, for probably more fatal cases result from the suppression of the urine than from the loss of blood in "black vomit." Digitalis is usually administered from the beginning, and is usually combined with small doses of belladona, and the combination is usually effected in a menstruum of fluid magnesia, thus combining into a single preparation the medicines desired to act upon both bowels and kidneys; and it is important in this disease that such combinations should be effected, as the medicine cannot be given very frequently, as more often than not it is instantly voided, and the frequent ingestion of medicine provokes vomiting. The suppression of the urine usually commences on the third or fourth day, albumin in abundance can often be detected on the second day, and toward the termination of the fever the urine is loaded not only with albumin, but also with bile. In some atypical cases the suppression of the urine is the first symptom noticed. Such cases are always fatal. The spirit of nitrous ether, given hypodermically, seems to act successfully more often than any other diuretic, but its exhibition is usually delayed until the suppression becomes marked, digitalis being relied upon in the earlier part of the attack; as in many cases the suppression never advances to such a grave degree that it is necessary to use the spirit of nitrous ether at all. Dry cups over the kidneys will sometimes relieve in a measure the congestion. In cases marked by a rapid suppression nothing seems to be of any avail, and the constantly augmenting diminution finally gives way to total suppression, which almost invariably means death, one or two cases only being on record in which recovery has followed a total suppression.

The support of the patient is a difficult matter, for the ingestion of food is contra-indicated during the first stage of the fever, and also during the last stage if the tendency to "black vomit" is strong. Food, even if retained for a short time, is not digested, and the irritation caused by its presence is so great that often it brings on almost uncontrollable vomiting. Experience has shown that no attempt at alimentation must be made until vomiting is thoroughly under control. When this end has been attained, the food must be given only in very small doses, but frequently repeated. Milk diluted with some one of the aerated waters, is usually selected, and is given at first in tablespoonful doses only. As the patient progresses toward recovery, milk-punch is allowed, followed by light soups, egg-nog, soft-boiled eggs, raw eggs with sherry or port wine, etc. Port wine is usually given from four to six times per day, for two or three weeks succeeding the establishment of convalescence. Great difficulty is experienced at first in preventing patients from eating too much, as the appetite is enormous and it seems often impossible to satisfy it.

The emaciation produced by the fever is very great and very rapid, the loss in weight sometimes amounting to as much as from twenty to forty pounds, depending upon the original weight of the individual and the severity of the attack. The duration of the disease in mild cases is from four to six days, and in severe ones eight to twelve. Adipose people lose more weight than their leaner brethren. Convalescence once established pro-

ceeds very rapidly, and as a rule, to perfect recovery; but a loss of muscular power, which is not regained for a considerable length of time, remains in nearly all cases. The jaundice needs no attention, as it usually passes away inside of two weeks without treatment.

A startling difference is observed in the mortality resulting from private and hospital practice. The death-rate of the Brazilian yellow-fever hospitals is something appalling. The treatment is almost nothing at all beyond the administration of quinine, and they are utterly destitute of the appliances necessary for the most successful treatment. They are in nearly all cases so greatly overcrowded as to interfere with proper ventilation, and the attendants (nurses they are not) are in a great many instances any person that can be picked up out of the streets, who are willing to work in a yellow-fever hospital; and they consequently know, not only nothing about nursing, but in many instances have not the faintest idea of how to perform their duties properly; and they are so few and far between that they are unable to attend to the wants of one-half their patients. A considerable portion of the time of the few attendants that they do have is taken up in removing to a side room, called "the dying-room," such patients as are deemed past recovery, that their beds may be vacated to make room for the constantly arriving train of new victims. So little attention is shown patients that several instances are known of patients making their escape from the Santa Casa da Misericordia in Santos, and not only were they not missed, but afterward, on recovering, found themselves recorded on the books of the hospital as having died, and having been buried.

At only one public hospital in Brazil has there been any attempt to introduce a better line of treatment, and that is in the Almeida Moraes at Santos, a hospital patronized and partially supported by the hospital tax on foreign shipping, and to which most of the foreigners that are attacked are now sent. Although they have no arrangements for baths, and their attendants are too few to admit of the administration of sponging or clysters (and indeed they still regard them as dangerous procedures), yet, a patient has a much better chance for his life here than in most of their hospitals, for it is situated near the sea-shore and a fine sea breeze constantly blows through the wards, keeping them always cool, and, moreover, crowding of patients is not allowed. Ice and iced water are freely dispensed to all patients, and as much attention as possible is paid to the wants of each. This alone has reduced the mortality of this hospital considerably, and the authorities pride themselves on the fact that they rarely lose an average case that comes to them in the very beginning of the attack.

This certainly is a step in the right direction, and it is to be hoped that it will extend to all the hospitals in Brazil, and that in the future we shall cease to hear of yellow fever being so frightfully fatal as it is now, and has been heretofore, in Brazil.

Earthworms and Tuberculosis.—MM. Lortet and Despeignes, in continuing some researches into the behavior of earthworms to tuberculous matter, have given additional scientific basis to the arguments advanced in favor of cremation. They have found (*Lyon Médical*, No. 29, 1892) that earthworms living in soil which contains tuberculous material bring up the bacilli to the surface. The worm-casts under such circumstances are capable of producing the most virulent tuberculosis in guinea-pigs.

A New Departure has been taken by the city government of Philadelphia with regard to sectarian medicine. The Mayor has signed a bill appointing a corps of homœopathists, consisting of one from each poor district of the city, twenty-five in all, to share, with the regular physicians previously appointed, the medical care of the city poor.

Clinical Department.

A SUCCESSFUL EXTRACTION OF A BOTTLE FROM THE BLADDER.

By RICHARD COLE NEWTON, M.D.,

MONTCLAIR, N. J.

The following is an extract from the clinical records of the Mountain Side Hospital: J. D——, aged twenty-four, domestic, single; residence, Montclair, N. J.; admitted August 6, 1892. Diagnosis, foreign body in the bladder. The patient has always enjoyed good health. A year or more ago she was treated with apparent success for some uterine trouble. About five weeks before admission she pushed a small vial into her urethra. While manipulating it, she lost her hold of it, and the object slipped into her bladder. Through shame she said nothing of her mishap, until forced to do so by painful and difficult micturition, and increasing pain and soreness over the vesical region, so that walking became painful. She then consulted a doctor. An ineffectual attempt having been made to extract the foreign body, the patient was advised to come to the hospital, where she came under the care of Dr. Love, of Montclair, and the writer. After the patient had been completely anæsthetized by ether and the urethra fully dilated, the bottle was discovered by the finger lying across the lower part of the bladder. By considerable manipulation the mouth of the bottle was brought near to the proximal end of the urethra, and held there by the left index-finger pushing it against the symphysis pubis, and by strong external pressure upon the bladder. A long, slender, but strong pair of forceps was taken in the right hand and its blades gently introduced upon the left index-finger as a guide. By a lucky manœuvre one blade was slipped into the mouth of the bottle, and with its fellow on the outside gave an excellent hold. The danger of breaking the bottle was thus reduced to a minimum. By a gentle undulatory motion the foreign body was safely delivered. It was beautifully incrusted inside and out with urinary salts. It was three and one-quarter inches long and one-half inch wide at the mouth, being a little wider below. It had a rounded bottom like a ginger-ale bottle. August 13th, the patient declares herself well and desires her discharge from the hospital. She has never had any incontinence of urine, and only suffered from pain for about forty eight hours after the extraction of the foreign body. She is taking three grains of salol ter in die, and the sediment in her urine is rapidly disappearing. Her bladder has been washed out daily with a boracic acid solution (gr. 10 to ℥ j.).

EYES OF DIFFERENT COLORS.

Dr. M. D. Hubbell, of this city, writes: "While crossing the North River from the Erie Depot in company with a friend, one afternoon recently, our attention was called to a company of fresh-air children. Among them I noticed a girl of about fourteen years, whose eyes presented a most distinct contrast in pigmentation. The right eye was a dark hazel, and the left eye a moderate light blue. Both presented the utmost uniformity of pigmentation in their respective colors, and were without other noticeable blemishes, either in size, form, or shape."

A New Use for the Nickel-in-the-slot Machine.—The Paris correspondent of the *Medical Press* writes that a new departure, and one well calculated to contribute to the comfort of the working classes, is the establishment in Paris of hot-water fountains on the penny-in-the-slot principle. Seventy or eighty of these will shortly be in working order, distributed throughout the city. On introducing the requisite coin, ten litres of water, heated by a "geyser," is given forth at a minimum temperature of 140° F.

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THE APPROACH OF CHOLERA.

THE cholera may be said now to be epidemic, or at least present, in all the seaboard cities of Northern Europe which lie in the route taken by the Russian refugees on their way to this country and England. Thus cases are reported in Hamburg, Bremen, Rotterdam, Antwerp, Havre, Dundee, Liverpool, and Glasgow, and other places, such as Berlin and possibly London, have become infected secondarily from these centres. Hamburg may be said to be the chief of these distributing centres, and from that city travellers have carried the disease to many of the places above mentioned as well as elsewhere. In Russia the epidemic is nearly stationary.

The first infected ship to appear at this port was the Moravia. She left Hamburg on August 18th, the day cholera was discovered in that city, and arrived here on the 31st. Twenty-two passengers had died during the voyage. There is, however, no cause for apprehension that the disease will get further than quarantine. All the ordinary approaches to this country are fairly well guarded, but there are other ways than by the Atlantic seaports and on the European liners, that the disease may creep in. One of these ways is by the West Indies and the Spanish Main. Vessels from Hamburg and other European ports sail regularly to Havana, Port-au-Prince, San Domingo City, La Guayra, and Vera Cruz, which places are also in regular steam communication with various points on our Atlantic and Gulf coasts, and it is not impossible that the disease may reach this country by some such round-about route, as it has before. Indeed, it is already reported to have appeared in Venezuela, where the revolution interferes with all enforcement of sanitary measures. Canada is also a weak spot, as the quarantine facilities there are admittedly defective. However, the Dominion authorities are fully alive to their peril, and forewarned is forearmed. The Hamburg-American line has given notice that it will discontinue its emigrant service to New York until the cholera has ceased on the other side, and it is likely that the other transatlantic lines will do the same. We need not feel especially grateful to their managers on account of this decision, however, as it was arrived at through no unusual consideration for the health of this country, but chiefly because the companies lose money when their vessels are subjected to long detention at quarantine.

Should it happen that the disease eludes the watchfulness of the quarantine officials, or enters the city by rail from other less efficiently protected ports, we are at least prepared to meet it as we never were before. The city is clean, there is an abundant supply of water that is not likely to become contaminated with cholera germs, and there is good drainage. With all these conditions in their favor, the sanitary authorities here ought to, and we doubt not will, be able to cope with the disease should it come, and keep it well within bounds. There is, in this city at least, no present cause for alarm. Prudence calls for scrupulous attention to the details of public and private hygiene, but that is all.

TREATMENT OF ALOPECIA AREATA.

IN an interesting article appearing in the *Annales de Dermatologie et de Syphiligraphie* for July, 1892, Dr. Raymond describes a mode of treatment of this obstinate affection which has been of good service in his hands. The therapeutic indications, he says, are three in number: 1, To bring about a rapid reproduction of the hair; 2, to prevent auto-infection, and to remove the dangers of transmission of the disease to others; 3, to prevent recurrences. The variety of the alopecia, the date of its appearance, and the length of preceding treatment must be taken into account in each case. Lotions of corrosive sublimate, iodized collodion, and tincture of iodine, as well as stimulating lotions, have given the author only unsatisfactory results. The method of treatment by intradermic injections, advised by Dr. Moty, is open to two serious objections: the extension of the patch during treatment, and the possibility of new patches appearing before the first is cured. The injections do not arrest the falling of the hair, and in two cases the author saw a new growth beginning on one side of the plaque while the hair was falling upon the opposite side; the area of baldness continued to extend, and in three instances new patches appeared during the treatment.

On the whole, this method does not appear to the author to present enough advantages to compensate for the inconveniences. He does not believe with Dr. Moty that the antiseptic substances thus injected act upon the probable parasites of the disease located within the tissues, but thinks rather that the action is one of revulsion. The same effects can be obtained with a one per cent. phenic acid solution. Following out the idea that these intradermic injections act rather by revulsion than by direct effect upon micro-organisms, the author has employed injections of simple water under which the patch becomes reddened just as after the use of corrosive sublimate. His observations have not yet been concluded, but the water produces no pain, and after the seventh injection hair begins to grow again just as it did in a number of cases after the seventh injection of corrosive sublimate or other antiseptic.

The two methods which have given the best results are that of Dr. Busquet and of the author himself. The former consists in the local use of tincture of cinnamon. This has the advantage that it can be applied by the patients themselves, and its employment has seemed to shorten the duration of the disease. Dr. Raymond's method is founded upon the view that continuous excitation of the skin is required to awaken the vitality of the

hair-bulb. To effect this the scalp is to be shaved, and twice a week thoroughly washed with some antiseptic soap. Each morning it must be rubbed with a mixture composed of bichloride of mercury, 0.5, tincture of cantharides. 25.0, balsam of Fioravanti (a preparation of the French codex), 50.0, and cologne water, 150.0 parts. The bare spots are to have an additional friction with the same solution applied by means of a stiff paint-brush. At night the patches should be rubbed in the same manner with a mixture containing 2 parts of salicylic acid, 10 of beta-naphthol, and 15 of crystallizable acetic acid, in 100 parts of castor oil. In all cases thus treated, the writer claims that the new growth of hair has appeared within the first month.

Generalized alopecias, in which possibly all the hairs of the body are lost, are looked upon as tropho-neurotic, and are not benefited by this mode of treatment.

THE MICROBE OF SOFT CHANCRE.

Drs. Quinquaud and Nicolle reported, at a meeting of the French Society of Dermatology and Syphilography, held July 7, 1892, that they had succeeded in coloring by a special method a bacillus which they believed to be the specific microbe of chancroid, and to be identical with that described by Unna. Their method, which they consider preferable to others heretofore employed, consists in coloring the sections with phenicated methyl blue and hydrates, and clearing them up with aniline oil mixed with xylol. A special form of bacillus is then seen arranged in very numerous and very long twisted chains, occupying the tissue of the excised chancroid. These little cordons are located in the lymph spaces and outside the cells. The aspect of one of the sections is said to be so very characteristic, that a diagnosis may be made at the first glance. The bacillus is not colored by the Gram method, nor by the ordinary process of Kühne. Culture trials have been made without success, and the results of inoculation experiments in animals have also been negative.

A POOR TIME FOR CRITICISM.

A press despatch from New Orleans credits a former president of the Louisiana State Board of Health with some very injudicious as well as, in part at least, unfounded utterances in disparagement of quarantine on the Atlantic coast. Among other things he is reported to have said :

"As for New York and other ports along the Atlantic seaboard, excepting Charleston, their methods and equipments are wofully inadequate to their necessities. They are, in fact, as revealed by this emergency, mere political office-rewarding stations, whose methods are a perfunctory make-believe to hoodwink the public with a show of importance, while in fact they lack every essential of scientific requirement and trustworthiness."

This statement is so misleading, and so malicious as well, that we are inclined to believe the gentleman in New Orleans has been incorrectly reported. But whether he has or not, the present is not the time to excite distrust and suspicion of those charged with the defence of our country against this foreign invasion. A very grave danger threatens us, and it is the duty of everyone to do what he can to aid those who are charged with the task of averting it. It is now too late to make any change in methods or men at our own or other quarantine stations, were it possible or desirable to do so. They are now undergoing a severe test, and if they succeed in keeping out cholera, let them receive the credit that will be their due, whatever sanitary system or whatever political party may derive advantage therefrom. We believe the system of maritime sanitation in use at the quarantine stations of the Mississippi River is a good one, but we cannot agree with the gentleman above quoted when he asserts that the only possible means of escape will be through "extraordinary efforts in the immediate enforcement of rational and scientific methods of defence, as embraced in our own (the Louisiana) quarantine system."

SUN-SPOTS AND INSANITY.

Some of the daily papers have expressed the opinion that, if careful observation were made, it would probably be found that insanity and nervous affections prevail most during periods of great magnetic disturbance. This opinion was the result of observing reports of cases of sudden insanity during the sun-spot maximum of 1883, 1884, and 1885, and of the present very marked disturbance of the sun and the magnetic force.

It was suggested that insanity is a heliocy rather than a lunacy. Facts so far show only that insanity is more frequent in the hot weather of summer and least frequent in winter. Lunatics seem rather more restless and insomnic during full moon. Both Arndt and Griesinger note that during the syzygies there is especial excitement and, among the epileptics, more fits.

Congress for the Study of Tuberculosis.—The following questions have been proposed for discussion at the third session of this Congress, to be held in Paris in July, 1893 : 1. The respective *rôles* of contagion and of heredity in the propagation of tuberculosis ; 2, Infectious diseases as predisposing causes of tuberculosis, and the influence of certain of them in the localization of the disease, as of gonorrhœa in testicular tuberculosis or of influenza in the pulmonary form ; 3, Periods of inactivity of tuberculosis, their duration, the means of recognizing them and of detecting the signs of their cessation, and the causes of their cessation ; 4, The modes of diagnosis of bovine tuberculosis, and especially concerning the value in this regard of injections of tuberculin ; 5, The dangers which may arise from the inhumation of those dead of tuberculosis, the opportuneness of substituting cremation, and the necessity of destroying the bacilli in the bodies of those dying from tuberculosis ; 6, New methods of prophylaxis and treatment based upon etiology ; 7, The utility of making meat inspection a regular practice everywhere. A prize of three thousand francs ($600) is offered for the best essay upon "The Means of Diagnosis of Latent Tuberculosis before the Appearance, or after the Cure, of the Declared Disease." The essay must be written in French, and sent to Dr. L. H. Petit, 76 Rue de Seine, Paris, prior to April 1, 1893. The essay is to be accompanied by a sealed envelope containing the name and address of the author.

News of the Week.

Cholera and Yellow Fever in Venezuela.—It is reported by way of Panama that the cholera has broken out in Venezuela. The long-continued rebellion, it is said, has caused sanitary conditions to be neglected, and this, together with the impure water-supply and the scarcity of food, is said to have aided the disease in its progress after its introduction. Yellow fever is also reported to be still epidemic in Venezuela, especially so among the soldiers of both the Government and the revolutionary forces. The mortality among the troops is very great.

Texas Fever.—Some forty cases of this disease have been discovered among cattle in the stock yards in this city. The disease is said to have been imported by apparently healthy cattle from Texas, and to have been communicated to less hardy milch-cows from this region. All the affected animals have been killed.

Berlin Cholera Regulations.—The Ministry of Ecclesiastical, Educational, and Medical Affairs in Prussia has published the following set of instructions as to the course to be followed in case of an epidemic of cholera: "1. The virus of cholera exists in the evacuations of the patients, and can be transferred with them to other persons, and can also be transported in articles of the most varied character. Such things are, for instance, linen, clothes, articles of food, water, milk, and other drinks; and if even the slightest traces of the evacuations, not perceptible to the natural senses, exist on or in them, the pestilence can spread. 2. The contagion may easily be carried, therefore, from place to place by persons who are or have been ill of cholera, or have come into contact with such, and who leave their places of residence in order, as they think, to escape the danger that threatens them there. This is all the more to be warned against, as, on the one hand, one may be already infected before departure, and, on the other, one can protect one's self better at home than when travelling, by taking the following precautions: 3. People from places where cholera exists should not be received into houses. As soon as cases of cholera have occurred in a place, persons coming from it must be regarded as possible bearers of the germ of the disease. 4. Lead as regular a life as possible. Experience teaches that all disturbances of digestion make one specially susceptible to cholera. Be on guard, therefore, against whatever can produce such disturbances, such as excessive eating and drinking and the use of indigestible foods. Avoid especially whatever causes diarrhœa or irritates the stomach. In case of diarrhœa consult a doctor at once. 5. Eat and drink nothing coming from a house where cholera is present. Things by which the disease can easily be transmitted—for instance, fruit, vegetables, milk, butter, fresh cheese—must be avoided or taken only after being boiled. Especially the drinking of unboiled milk is to be avoided. 6. All water which may be polluted by excrement, urine, kitchen refuse, or other dirt, must be most rigorously avoided. Water taken from the ground under inhabited places, or from swamps, ponds, drains, or rivers, is suspicious, because impurities generally flow into them. Water which may have become polluted in any way by the excrements of cholera patients is especially dangerous. Special care must be taken that water that has been used in cleaning vessels or dirty linen does not get into or near wells or standing and running waters. The best protection against the pollution of well-water is afforded by iron tube wells driven straight and sufficiently deep into the earth (Abyssinian wells). 7. If it is impossible to get water that is free from suspicion, it must be boiled, and only boiled water used. 8. All this applies not to drinking-water alone, but also to all water used for domestic purposes, because germs of disease can be communicated to the body by water used in cleansing kitchen utensils, cleansing and cooking food, washing, bathing, etc. In general, the belief that drinking-water alone is to be regarded as the bearer of the virus, and that one is completely protected if only unexceptionable water is drunk, is urgently to be warned against. 9. Every cholera patient may become the starting-point for the further spread of the disease, and it is therefore advisable to send such patients to hospitals. If this is impossible, nobody must be permitted to approach them without necessity. 10. Never enter a house with cholera in it, except at the call of duty. Never visit places where many people are assembled in cholera times. 11. Never eat, drink, or smoke in rooms in which there are cholera patients. 12. As the evacuations of cholera patients are specially dangerous, clothes and linen soiled with them must either be burned at once or disinfected in the manner stated in the instructions for disinfection published simultaneously with this. 13. The most scrupulous care must be taken that cholera evacuations do not get near wells or rivers serving as sources of water-supply. 14. All articles which have come into contact with patients, and which cannot be destroyed or disinfected, must be rendered harmless by means of hot steam in special disinfecting establishments, or not used for at least six days, during which they are kept in a dry and airy place exposed as much as possible to the sun. 15. Persons who come into contact with a cholera patient or with his bedding or clothing should wash their hands at once. Do not touch food with unwashed hands or put into the mouth eating and drinking utensils, cigars, or anything else that may have been soiled in the sick room. 16. In case of death the corpse must be removed to a mortuary as soon as possible. If it cannot be washed there, it ought not to be washed at all. The funeral should be as simple as possible. The guests should not enter the house of death or take part in any funeral feast. 17. Articles of dress, linen, and other things that have been used by cholera patients or have been in contact with the corpses of such patients, must on no account be used or given to others till they are disinfected. Especially they must not be sent to other places unless disinfected. The receivers of packages, containing such articles, from cholera places are urgently advised to send them at once, if possible, to a disinfecting establishment, or to disinfect them themselves with the necessary precautions. Cholera linen ought not to be received for cleaning till it has been disinfected. 18. No other preservatives against cholera are known, and the public are advised not to use the so-called cholera-brandy and other alleged preservatives which are always extensively advertised in cholera times."

Dr. William F. Duncan, of Williamsbridge, N. Y., died at his home, on August 29th, of peritonitis.

Dr. Koch is reported to have said that the epidemic of cholera in Hamburg would die out as quickly as it had increased. If this report is true, it implies a confidence on his part in the efficacy of sanitary measures of Hamburg which has not been shared in the last two weeks by the world at large.

A Boom in Lysol.—The chief Sanitary Board of Austria has published, apropos of cholera, a statment regarding the value of some new disinfectants, in which it draws special attention to lysol. It says that the drug is speedily destructive to the comma bacillus, but is much less poisonous to man than is carbolic acid. A further advantage which lysol possesses over carbolic acid as a disinfectant of the hands, linen, etc., is that a solution of it renders the skin smooth instead of rough.

Sir Joseph Lister, having reached the age limit, will be retired from the teaching staff of King's College next year.

The Social Evil in New Orleans.—The City Council of New Orleans is considering the expediency of passing an ordinance requiring the registration and weekly examination of prostitutes.

Cheese.—The Treasury Department has forbidden the importation of rags, licorice-root, etc., from Europe and the East, on account of the danger of importing cholera germs at the same time. It would be well to keep out cheese also, since the comma bacillus is said to grow readily in this article of food.

Dr. W. Thornton Parker is to deliver a course of lectures on Medical Jurisprudence during the Session of 1892–3, at the College of Physicians and Surgeons, Chicago.

Yellow Fever.—The epidemic of yellow fever in Santos and other of the coast towns of Brazil, which has been raging with unparalleled intensity for upward of a year, is said to be abating. This is probably due to the fact that there is no more fuel for the disease to feed upon, and can in no sense be attributed to the action of the sanitary authorities, either national or municipal. Brazil has been disgraced among the nations of the earth by the supineness of her rulers in the face of such an epidemic.

The Carriers of Contagion.—About one hundred thousand Polish and Russian immigrants have come to this country in the past year, bringing with them the germs of typhus fever and small-pox. They have carried the cholera to the northern seaboard cities of Europe in most direct connection with this country, they have brought it already to our own shores, and doubtless many more are on the way with it.

Spanish-American Congress of the Medical Sciences.—This Congress will be held in Madrid in October next, in connection with the festivities commemorative of the discovery of America. A number of subjects relating to the influence of the discovery of America upon medicine, to acclimatization of men and animals, and to the peculiarities of practice in tropical America, will be discussed.

Dr. Henry S. Stark's Address is 270 Seventh Street. The address, 201 West Fifty-fourth Street, which appeared at the end of Dr. Stark's article in our issue of August 20th, should have been placed after the preceding paper by Dr. Peterson.

Wernicke's Atlas of Cerebral Anatomy.—The Berlin Academy has voted the sum of $200 to Professor Wernicke, of Breslau, toward the expense of the revision of his Atlas of Cerebral Anatomy.

Succi Fasting Again.—Signor Succi, who at last accounts had been declared insane, is now in Naples and has commenced a new fast there. A committee has been formed to watch him and observe the phenomena of circulation, respiration, weight, etc., and a bulletin will be issued daily.

Scarlet Fever is still epidemic in London, and complaint is made that the hospital accommodation is inadequate.

Licorice Root from Batoum is one of the articles to which entry has been refused by the Collector of Customs at New York. Batoum is in the infected region in Russia, and it is feared the bagging in which the licorice root is packed might convey the contagion of cholera.

Proposed Law Regarding Medical Expert Testimony.—The Minnesota State Medical Society has had the following bill drafted :

SECTION 1. In all cases pending in the courts of this State, civil and criminal, before or at the time of the trial of said cases, the Judge of said court, when it is made to appear to him that the appointment of experts upon medical, scientific, or mechanical questions is desirable, may appoint such experts to examine into the subject matter in controversy, said experts so appointed to be selected in reference to their impartiality between the contending parties; the number of such experts in each case to be fixed by the Court.

Sec. 2. In all cases where experts are so appointed, the Court is to fix their compensation, and in all criminal cases direct the payment of the same in the same manner as witnesses on the part of the State are paid; in all civil cases the amount so fixed and determined by the Court shall be taxed as disbursements by the successful party.

Sec. 3. The Court may order such experts to examine into any medical, scientific, or mechanical question, and after such examination to testify in court in reference thereto.

Sec. 4. The testimony of said experts so appointed by the Court shall be *prima facie* evidence of the statements and conclusions as to the questions in reference to which said testimony has been given.

Sec. 5. The Court may also fix and determine the amount to be allowed such experts for and on account of any medical, scientific, or mechanical examination, analysis or test, which the Court may deem advisable to have made, and direct the payment thereof, or permit the taxation thereof, as costs, as hereinbefore provided."

The Second Congress of Cuban Physicians will be held in Havana, in October of the present year. The Congress is held every second year, and should have met in January last, but it was decided to postpone it until October, in honor of the discovery of America. The following subjects have been proposed by the Committee on Organization for discussion: 1, Topography and statistics of any part of the island concerning which no description has yet been published; 2, Etiology of yellow fever; 3, Pro

phylaxis and treatment of yellow fever; 4, Clinical symptoms of yellow fever; 5, Pathological anatomy of yellow fever; 6, Etiology of tetanus; 7, Pathology of the liver in hot climates; 8, Paludism in its relation to pregnancy, child-birth, and the puerperal period; 9, Anatomy and physiology of the floor of the pelvis in women; 10, Has the knowledge of the pathogeny of diphtheria had any influence upon the results of treatment? 11, Comparative statistics of antiseptic therapy in Havana; 12, Reciprocal relations in their course of infections acquired simultaneously; 13, Is paludism the cause of the pernicious nature of the fevers in Havana? 14, Project of sanitation for the city of Havana; 15, Hygiene of private schools; 16, Investigation of alkaloids in cases of poisoning; 17, Experimental and clinical study of chronic diarrhœa; 18, The most common forms of skin disease in Cuba; 19, The abuse of alcoholic beverages in Cuba, its causes and most common pathological manifestations; 20, Affections of the lachrymal ducts; 21, Mutual benefit societies in their relations to physicians; 22, The visceral manifestations of gout in Cuba. The Committee has proposed a series of most interesting questions, and the intelligent discussion of them by the physicians of Cuba ought to be of immense service in widening our knowledge of diseases peculiar to tropical regions.

Strychnine in Cholera.—Dr. T. Ffrench-Mullen, of Bikamir, writes to the *Indian Medical Gazette* that he has used hypodermic injections of strychnine in some hundreds of cases of cholera within the last four months, and with very satisfactory results. He used the drug in every case where collapse seemed approaching or had set in, the dose being five minims of liquor strychninæ in an equal quantity of water. As his cases were almost all seen in their houses, and there were so many to be visited, it was, as a rule, only possible to give two injections in the day to any one case, that is, when on the morning and evening rounds. He gave, however, five injections in the twenty-four hours, and two more during the following twelve hours, in the case of a prisoner where the effects could be watched, and has no doubt the man owed his recovery to this remedy. When the urinary secretion had not been re-established within twelve hours or so of the cessation of the other symptoms, he used hypodermic injections of pilocarpine with, in many cases, marked success, the urine being passed within less than five minutes after the use of the syringe.

Quarantine Regulations.—Dr. Jenkins, Health Officer of the Port of New York, has issued the following order to the representatives in this city of the different steamship lines:

"All vessels from cholera-infected ports, or carrying steerage passengers from infected localities, will be subjected to quarantine of detention from two to five days. Passengers and their baggage will be transferred to Hoffman Island, where they will receive a bath, while baggage and clothing are disinfected by steam. Immediately after such transfer steerage and cargo will be disinfected. The passengers will be then returned to the vessel, which in absence of any development of suspicious cases will be allowed to proceed to her dock. This regulation is in accordance with a telegram sent to the Secretary of the Treasury, requesting that the same regulations at the port of departure be enforced under the direction of the United States Consul. If the Health Officer is satisfied upon investigation that such regulations have been carried out at such ports, in regard to emigrants, the above regulations will be modified."

Dr. Obermueller, physician to the Czar, died in St. Petersburg on August 27th at the age of fifty-five years. His death is said to have been caused by cholera.

Circular of the Board of Health Relating to Cholera.—The following are the instructions to be issued by the New York Board of Health in case of the appearance of cholera in this city. They will be printed in English, German, Italian, French, and Hebrew:

"Healthy persons 'catch' cholera by taking into their systems through the mouth, as in their food or drink, or from their hands, knives, forks, plates, tumblers, clothing, etc., the germs of the disease, which are always present in the discharges from the stomach and bowels of those sick with cholera. Thorough cooking destroys the cholera germs; therefore: Don't eat raw, uncooked articles of any kind, not even milk. Don't eat or drink to excess. Use plain, wholesome, digestible food, as indigestion and diarrhœa favor an attack of cholera. Don't drink unboiled water. Don't eat or drink articles unless they have been thoroughly and recently cooked or boiled, and the more recent and hotter they are the safer. Don't employ utensils in eating or drinking unless they have been recently put in boiling water; the more recent the safer. Don't eat or handle food or drink with unwashed hands, or receive it from the unwashed hands of others. Don't use the hands for any purpose when soiled with cholera discharges; thoroughly cleanse them at once. Personal cleanliness and cleanliness of the living and sleeping rooms and their contents, and thorough ventilation, should be rigidly enforced. Foul water-closets, sinks, Croton faucets, cellars, etc., should be avoided, and when present should be referred to the Health Board at once, and remedied.

"The successful treatment and the prevention of the spread of this disease demand that its earliest manifestations be promptly recognized and treated; therefore: Don't doctor yourself for bowel complaint, but go to bed and send for the nearest physician at once. Send for your family physician; send to a dispensary or hospital; send to the Health Department; send to the nearest police station for medical aid. Don't wait, but send at once. If taken ill in the street, seek the nearest drug store, dispensary, hospital, or police station, and demand prompt medical attention. Don't permit vomit or diarrhœal discharges to come in contact with food, drink, or clothing. These discharges should be received in proper vessels and kept covered until removed under competent directions. Pour boiling water on them, put a strong solution of carbolic acid in them (not less than one part of acid to twenty of hot soap-suds or water). Don't wear, handle, or use any articles of clothing or furniture that are soiled with cholera discharges. Pour boiling water on them or put them into it, and scrub them with the carbolic acid solution mentioned above, and promptly request the Health Board to remove them. Don't be frightened, but do be cautious, and avoid excesses and unnecessary exposures of every kind."

Society Reports.

BRITISH MEDICAL ASSOCIATION.

Sixtieth Annual Meeting, held at Nottingham, July 26, 27, 28, and 29, 1892.

SECTION ON OBSTETRIC MEDICINE.

FIRST DAY, WEDNESDAY, JULY 27TH.

President's Address.—DR. GALABIN, the Chairman of the Section, in his opening address drew attention to the way in which surgery now predominated in the treatment of diseases of women. In reviewing the improvements which had taken place in obstetrics, he said that extra-uterine gestation had been shown to be a much more frequent affection than previously supposed. The occurrence of tubal abortion was still a matter of controversy. He was convinced that a clot might be formed in a Fallopian tube with open extremities, without the occurrence of fœtation.

Many of the cases which were formerly called abdominal gestation were intra-ligamentous, which was a better name than subperitoneal; or they might be called mesometric, the ovum getting in by separation of the mesosalpynx, and some sort of pedicle could generally be made out which could be ligatured. In some cases of intra-ligamentous pregnancy the tube dilated to a considerable extent, and he cited a case in which it had so dilated as to contain thirty-six ounces of pus without rupture occurring.

With reference to the application of abdominal section to the treatment of placenta prævia, he thought that the older methods gave better results than were likely to be obtained by it, but it might be useful in some cases of accidental hemorrhage.

Abdominal section for puerperal peritonitis had not been very successful, except when the tubes were the source of the mischief, as even if the whole uterus were removed, as had been advocated, there was a probability that there would be other septic foci left behind.

The treatment of post-partum hemorrhage had been improved by the introduction of the methods of injecting hot water and plugging the uterus, and the treatment of the anæmia resulting by the injection of large quantities of normal saline solution, which was useful providing the bleeding had been stopped.

Post-partum Hemorrhage.—DR. HERMAN, of London, in opening a discussion on this subject, said that bleeding in all parts of the body was stopped by pressure, and in the treatment of post-partum hemorrhage no method could be relied upon which did not act by causing compression of the vessels. The surest way of causing post-partum hemorrhage was to drag out the child before the uterus was ready to contract. There was no necessity to hasten delivery when the uterus was quiescent, as no pressure effects would be caused by that condition, which was the opposite of the state of tetanic spasm set up by long-continued efforts of the uterus to overcome an obstruction. The right line of treatment in ante-partum hemorrhage was to get contractions to occur before delivery was brought on It was very important always to see that the whole of the chorion was removed.

The methods of arresting post-partum hemorrhage might be divided into three groups: A contraction was encouraged by, 1, direct stimulation; 2, reflex stimulation; and 3, drugs. Under the first head were mentioned kneading with the hand outside of the abdomen, the hand in the uterus, hot water, and electricity. Reflex stimulation could be obtained by means of cold cloths applied to the vulva and abdomen, and by putting the child to the breast. The only drug in which the speaker had any faith was ergot. He did not approve of the use of perchloride of iron as a styptic.

As regarded plugging the uterus with gauze, there was some danger. One case of death from entrance of air into the veins had been reported.

The treatment was unphysiological, for when the uterus would contract by the gauze, it might be made to contract by other means.

In summing up, the author held that the best means of stopping post-partum hemorrhage was by continued compression, and the best means of doing this was with one hand on the abdomen and the other with its fingers flexed passed into the vagina, the fundus being compressed between the two.

DR. MORE MADDEN, of Dublin, said that the most frequent cause of fatal hemorrhage was the hemorrhagic diathesis, and this was more frequent among the poor in Ireland than in England. He advocated tablespoonful doses of ergot before the birth of the child, in cases in which post-partum hemorrhage was anticipated.

DR. BYERS, of Belfast, in discussing the question whether chloroform promotes post-partum hemorrhage, took the side that it did not promote hemorrhage.

DR. HORROCKS, in continuing the discussion, said the uterus was sometimes relaxed without hemorrhage occurring. Throughout pregnancy it alternately contracted and relaxed, and the same occurred post partum. He did not think that chloroform promoted hemorrhage.

DR. H. R. SPENCER, of London, drew attention to frequency of lacerations as a cause of post-partum hemorrhage; in these plugging was an excellent treatment. He had treated eight cases of severe anæmia, likely to prove fatal after hemorrhage, by the intra venous injection of normal saline solutions, with four recoveries.

DR. PURSLOW, of Birmingham, thought many cases were due to the abuse of Crédé's method of expelling the placenta, forcible expression being used too soon after the birth of the child. The speaker had always found cases yield to pressure of the uterus and injection of hot water, and had never used iron.

DR. MURDOCH CAMERON, of Glasgow, thought that an important point in the preventive treatment was the early use of forceps. Many cases resulted from leaving the membranes in utero. He did not use ergot and never used perchloride of iron, but believed in kneading the uterus.

DR. WALTER, of Manchester, related a case in which plugging the uterus was tried; the uterus dilated further above the plug, and hemorrhage had subsequently to be arrested by hot water.

DR. ROBERT BARNES, of London, remarked that there would be cases of post-partum hemorrhage in spite of all preventive means. He always used hot water first and believed very strongly in it, but it was no good when there was no reflex response to irritation, and in those cases we must use perchloride of iron. He did not believe in ergot before the birth of the child. He had found hot water injection better than cold; he had tried the alternate injection of hot and cold, but had given it up.

MR. STANMORE BISHOP, of Manchester, advocated compression of the abdominal aorta.

DR. PARKINSON thought a preliminary course of tonic treatment was a good preventative.

DR. CULLINGWORTH, of London, would emphasize the order of treatment laid down by Dr. Herman, to wit: 1st, external manipulation; 2d, combined external and internal manipulation; 3d, injection of hot water. He did not believe that iron or plugging were ever needed after proceeding as above.

DR. GALABIN thought it difficult to compress the uterus when it was completely relaxed. He would plug the uterus with iodoform gauze in preference to using perchloride of iron injection. He thought the plug acted in a reflex manner by setting up contraction, and not by direct pressure, and doubted if anything would save the patient when contraction could not be obtained.

Prevention of Hemorrhage in Cæsarean Section.—DR. MURDOCH CAMERON discussed this question. He said the elastic band induced inertia and might lead to

hemorrhage later. He had used a flat Hodge pessary pressed on the uterus by an assistant, the incision being made through the centre of the pessary. He would never extract the placenta before the child, as contractions might be set up and reuder delivery of the child difficult. The uterus should not be everted until after the birth of the child. It was quite unnecessary to avoid the middle line of the uterus, even if the placenta were situated there. An assistant should grasp the edges of the uterine wound and press them together. A flat warm sponge should be pressed on the uterus, and this never failed to cause contraction. He would advise never to pack the uterus or to wash it out.

Dr. Heywood Smith, of London, mentioned a case in which after Cæsarean section the uterus would not contract; he passed in a lump of ice and this had the desired effect.

Dr. H. R. Spencer had found the pessary, as advised by Dr. Cameron, fail in a case in which fibroids were present.

Septic Hydræmia Following Miscarriage.—Dr. J. Headley Neale, of Leicester, reported the case of a "Septic Hydræmia Following Miscarriage." The woman, thirty-five years old, who was admitted to hospital with intense œdema of the whole body, had miscarried six weeks previously, and the swelling had come on since. There was no albuminuria and no cardiac murmur. She was tapped in the legs on several occasions, and three and a half gallons of fluid drawn off. She died suddenly on the tenth day. On post-mortem examination fluid was found in the serous cavities; the uterus was œdematous and contained a small piece of retained placenta. The speaker thought the symptoms were due to septic poisoning from the retained fragment.

Second Day, Thursday, July 28th.

Radical Cure of Retroflexion.—Dr. Braithwaite, of Leeds, read a paper on this subject.

He separated the bladder from the uterus, after incising the anterior fornix, without opening the peritoneum. The anterior surface of the uterus being brought into view, a strong silk ligature on a specially curved needle was passed through the supra-vaginal portion of the cervix, then through the fundus, and back through the cervix, and tied, being then completely buried. The cervix had been previously dilated so as to allow the introduction of the finger, by means of which the uterus was placed in position before passing the ligature. This operation was only advisable in very severe cases.

Dr. Heywood Smith advocated ventral fixation, and thought that in some cases this might be done without an abdominal incision.

Dr. Leith Napier, of London, condemned the attempt to pass sutures in ventral fixation without opening the abdomen. He thought ventral fixation by abdominal section was preferable to a vaginal operation, and easier.

Dr. Batchelor said that in cases where there were no adhesions, he preferred Alexander's operation. Where there was fixation, abdominal section was better, as it allowed an opportunity of examining the parts.

Dr. Galabin doubted whether the silk loop would not set up suppuration. He was not fond of abdominal fixation, and in cases free from adhesions he found pessaries to answer the purpose.

Twin Tubal Pregnancy.—Dr. Walter, of Manchester, reported a case of tubal gestation in which both tubes were gravid. The patient had had six children, the last four years ago, and was admitted with pain in the abdomen, difficulty in micturition and defecation. The periods had been too frequent, the last one was at the end of July, 1891, after nine weeks' amenorrhœa, with symptoms of pregnancy.

On the left of, and close to, the uterus, there was a tender mass the size of an orange. The patient was allowed to go home and was seen again in December; the swelling was then the size of a hen's egg. She was admitted again February, 1892, and operated on. She had missed the last period, and on the day before the operation had an attack of pain and diarrhœa.

At the operation clotted blood was found in the peritoneal cavity; there was a swelling on each side of the uterus. The tubes were removed and sent to Mr. Bland Sutton, who reported as follows:

"Specimen consists of two Fallopian tubes, the left one the larger, and occupied by an apoplectic ovum with an embryo in the amniotic cavity.

"Right tube, abdominal ostium closed. Interior contains a tubal mole, amniotic cavity, but no fœtus. Microscopic section showed chorionic villi."

This was the first reported case in which undoubted tubal pregnancy on both sides occurred; some cases had been reported as such, but the existence of pregnancy had not been indubitably proved.

Dilator of Champetier de Ribes.—Dr. Herman described this cervical dilator, which was a large balloon-shaped bag made of silk, which was introduced through the cervix by grasping it in a special pair of forceps, and when in the uterus, distended by injecting water into it. It would hold seventeen ounces of fluid, and as it was inelastic, could not be poured out until the cervix was thoroughly dilated.

Its advantages over Barnes's bags were, that several operations for introducing sizes were not necessary, and that it was not possible with Barnes's bags to get complete dilatation.

In four cases the time required to produce dilatation by this bag had been from six to twenty-four hours. The speaker had tested the compressibility of the bag, and found that its diameter, which was three and one-half inches when distended, could only be reduced by pressure to three inches.

Dr. Robert Barnes, of London, pointed out that Champetier's bag displaced the fœtal head, and thought that the sudden distention of the lower uterine segment which was caused might produce rupture. The first idea for his own bags, which he brought out in 1869, was like that of Champetier, but he gave this up for the well-known fiddle-shaped ones.

Dr. Murphy, of Sunderland, praised Barnes's bags and thought that bursting, when produced, was always the result of not observing carefully the amount of water injected.

Dr. Spencer, of London, had found Barnes's bags slip out, and had seen the larger sizes produce œdema of the vulva and vagina; he thought Champetier's bag would be the method of the future for the induction of premature labor.

Stoltz's Operation for Cystocele.—Dr. Leith Napier, of London, then read a paper with this title. Cystocele was a hernia of the bladder through the muscular fibres of the vaginal wall. An ordinary cystocele, or what he preferred to call colpo-cystocele, was generally associated with prolapse of the uterus; the most important cause of this was parturition. For prolapse of the anterior vaginal wall, Stoltz's method was the only satisfactory one.

He first made a circular denudation of the wall, and then passed a silk thread from the upper end with a needle at each end, so as to form a circular buried purse-string suture. The centre of denudation was then pushed up while the knot was tied. The ligature was passed before denuding the surface, and removed in ten days by cutting the knot.

Dr. Heywood Smith had performed the operation, and thought passing the ligature before denuding the surface puckered up the mucous membrane and made denudation more difficult.

Third Day, Friday, July 29th.

Treatment of Fibroids of the Uterus.—Mr. Knowsley Thornton, of London, in opening the discussion on this subject, said that there were many cases where no symp-

toms were present, and the tumor was only found accidentally; in those cases he thought it better not to inform the patient of the existence of the tumor. There were other cases in which medical treatment would do all that was necessary. This consisted in regulating the diet, forbidding stimulants, and giving ergot during the intervals between the periods; this treatment in many cases sufficed to stop the hemorrhage. He would never administer iron, and though other drugs had been tried, he considered ergot by far the best. When there was pain during a period from the retention of menstrual blood, the passage of a No. 8 or 9 bougie just before the period often gave relief. The curette might be used with advantage to check hemorrhage. In the case of growths which rose above the pubes, an abdominal belt, by supporting the tumor and preventing its movement, often gave great relief. In most cases both large and small fibroids were found to disappear after the menopause. Although relief was sometimes given, he had never known a single case cured by baths or mineral waters. Of electricity, he had no personal experience, but he was not satisfied that any single case was ever cured by it; in some cases it might check hemorrhage, but so would some other intra-uterine applications. It might cause temporary shrinkage of the tumors, to be followed by increased rapidity of growth. He had operated on cases in which the electrical treatment had previously been tried, and bad results had followed. His own experience of vaginal enucleation had been singularly unfortunate; he thought it a much more dangerous operation than abdominal section, and one could not be sure that there were not other tumors remaining after the operation.

The speaker would avoid enucleation as much as possible, and where it was unavoidable would use the strictest antiseptic precautions. He thought that for dilating the cervix, tents, when thoroughly antiseptic, were the best means, but as their asepsis could never be depended on he preferred to use rapid dilatation by bougies. He thought that the internal os was always lacerated when the cervix was sufficiently dilated to allow of enucleation. In the after-treatment of enucleation he would plug the vagina with iodoform gauze and leave the plug in for several days. He would keep the patient in bed for ten days, and after removing the plug would douche the vagina frequently. If much subsequent oozing occurred he would apply perchloride of iron and plug the uterus. Coming to the relative value of oöphorectomy and hysterectomy, he said that he would never decide on which operation to perform until the abdomen was opened and the parts examined. He believed that removal of the ovaries was a certain cure when all ovarian tissue was removed, though the result was in some cases rapid and in others slow. The mortality of the operation in his own hands had been about four per cent., and he believed death had been due in most of these cases to the puncture of large vessels by the needle. He thought it well always to transfix the ovarian ligament. He kept the patient in bed for three weeks after the operation. The best time to choose for the operation was shortly before the period was due, the reasons being that the patient was then in her best condition, having recovered from the loss of the last period, and that all being now ready for the next period, all that the operation did was to hasten it. With reference to hysterectomy, he thought that the supra-vaginal operation with extra-peritoneal treatment of the stump was the best operation. The ovaries might be removed or left, but he thought it advisable generally to leave them.

Dr. James Murphy, of Sunderland, advocated treatment by morcellement, that is, tearing away the tumor piecemeal with suitable forceps, after dividing the capsule. He narrated a case in which there was a large tumor in the posterior wall with the uterus retroverted, which he had treated in this way with success.

Dr. Horrocks, of London, thought there were different kinds of fibroids, but clinically these tumors were not malignant and seldom caused death. He had never seen a death from hemorrhage, and would not, except in a few cases, recommend surgical treatment.

The age of the patient was important in deciding upon the line of treatment. He had never seen a tumor disappear, though they sometimes diminished in size. He thought electricity did good, but had been compelled to stop the treatment on account of pain. The current really acted as a caustic. He thought that all were agreed that the positive pole was a hæmostatic.

Dr. Leith Napier, of London, thought that when a fibroid began to grow after the menopause, it was much more serious and required surgical treatment. He had seen cases of very severe and prolonged hemorrhage eventually recover spontaneously. He did not see any good in leaving the ovaries in hysterectomy. It was sometimes impossible to find the ovaries, and he would then tie tubes and remove them. He advised tying the uterine arteries first to arrest hemorrhage from the stump.

Dr. Tivy, of Bristol, had used the electrical treatment for five years and had seen no bad results. He used a current up to 150 milliampères.

Mr. Lawson Tait, of Birmingham, did not consider it necessary to remove the ovaries completely, and often left part of one in performing oöphorectomy for fibroid. He had found the mortality of hysterectomy increased from seven or eight per cent. to fifty per cent. in cases in which the electrical treatment had been previously applied. He thought that electricity might sometimes temporarily stop hemorrhage, just as the application of iron or alum would.

Dr. Elder, of Nottingham, said that he had at first used electricity, but had found that the results were not permanent, and had even seen sloughing follow its use.

Dr. Michie, of Nottingham, thought there was a nerve-centre for the function of menstruation, and that its arrest depended on the severance of the nerve-connection.

Mr. Stanmore Bishop, of Manchester, advocated the intra-peritoneal treatment of the stump in hysterectomy, and thought the greatest danger was of septic infection from the mucous membrane of the cervical canal.

Dr. Murdoch Cameron, of Glasgow, said he had seen these tumors disappear when treated by electrolysis.

Dr. Heywood Smith, of London, would operate in cases where there was pain, rapid growth, and hemorrhage. Operation is sometimes unavoidable, especially in the lower classes.

Dr. Batchelor thought Dr. Horrocks had much underestimated the death-rate from fibroids, and had not taken into account many other causes of death besides hemorrhage.

Dr. Spencer would like to ask Mr. Thornton what he would do with a large intra uterine tumor which was gangrenous and being delivered, and whether he thought removal of the ovaries was successful in cases of soft myoma.

Dr. Cullingworth, of London, would ask Mr Thornton why he insisted on giving ergot during the menstrual interval only? He would leave one or both ovaries in hysterectomy.

Dr. McVittie, of Dublin, thought the intra-polar action of electricity was much more important than the local action. He would use large cells and a low tension current.

Mr. Thornton, in reply, said all were agreed that fibroids should not be interfered with surgically except in extreme cases. But he drew attention to the living death which many patients with fibroids suffered, and he would in those cases operate. He had never seen a case of insanity follow operation for fibroid tumor. He believed that many women suffered real misery from the artificial menopause brought on by operation. He had in one case completely removed the tubes and left the ovaries, and menstruation had gone on; he thought it could not depend on the tube alone.

In reply to Dr. Spencer's question, he said he would enucleate the tumor.

Anatomy of the Hymen.—Dr. Cullingworth, of London, read a paper entitled "Some Remarks on the Anatomy of the Hymen and of the Posterior Commissure of the Vulva." The hymen was, he said, generally described as circular or oval, and its edges apart. This could only be true when the labia were forcibly separated. In the adult virgin it was normally concealed by the labia minora with their internal surfaces in apposition. On separating these the edges of the hymen were seen lying in apposition; no actual opening was seen, but simply a vertical slit. The free borders of the hymen were straight or denticulate, and their upper extremities met in front in a fold which partially enclosed the urethral orifice, and formed the elevation which marked the opening of the urethra; this fold disappeared when the hymen had been stretched. He had never seen a case in which the hymen could not be found. He had never seen a cribriform hymen, and thought its existence problematical. A fold analogous to the hymen had been demonstrated by Mr. Shattock at the orifice of the prostatic vesicle in man. The posterior commissure had been shown to be the posterior junction of the labia minora, as in cases in which these were deeply pigmented a line of pigment could be traced uniting them posteriorly. The fossa navicularis was situated between the fourchette and the posterior part of the hymen.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, February 24, 1892.

H. P. Loomis, M.D., President in the Chair.

Musical Heart Murmurs, and the Chordæ Tendinæ.—Dr. H. S Stearns said that, a little less than three years ago, Dr. E. Hodenpyl had presented to the Society several specimens showing the chordæ tendinæ stretched across the left ventricle, and the question has been raised whether they gave rise to any abnormal sound. The specimen which he was about to present showed a similar condition. The specimen had been removed from a man who during life had had a musical systolic murmur at the base of the heart, and transmitted to the vessels of the neck, and also a diastolic murmur at the base, not transmitted into the vessels of the neck.

Dr J. M. Byron said that the specimen was not only very interesting, but quite rare. He had seen two similar cases in which the condition had been diagnosticated during life by the musical sound produced during the systole of the heart. In the specimen presented, the inferior chorda tendina could not have produced the musical murmur, for the heart would have emptied itself before this band would have enough tension to give rise to a musical vibration. The sound may have been produced by the band across the upper part.

The President said that he had followed the case at the bedside very closely. The murmur was peculiarly loud and blowing, and was heard all over the præcordial space. It had been supposed to be due to the flapping of an eroded valve. At the time of his admission, the symptoms were those of advanced heart disease. He agreed with the preceding, that the sound was produced by the upper chorda tendina.

Dr. J. S. Ely said that, by way of corroboration of what had been said, he would remind the Society that in Dr. Hodenpyl's specimens the chordæ tendinæ were stretched across the lower or apical portion of the heart, and that in his cases there was no musical murmur.

Thrombosis of the Middle Cerebral Artery.—Dr. Stearns also presented this specimen. It had been removed from a man forty-five years of age, who had been brought to the hospital in an ambulance in a stupid condition, with a temperature of 104° F., suffering from intense headache, and unable to speak distinctly. According to his friends, he had been sick for about two weeks, the stupor gradually deepening. After his admission, it was thought possible that he had typhus fever, and he was accordingly isolated. Under moderate doses of quinine the temperature fell to 101° F., and he continued in this same dull condition with all of the general symptoms of pachymeningitis, with the speech symptoms particularly prominent. About four days before his death, he got out of bed, and while walking across the ward, fell in a faint. After this he was found to have motor paralysis on the right side, sensation was diminished, and was associated with formication. He remained unconscious from this time until his death. The case was seen by a number of physicians, and a diagnosis was made of pachymeningitis with a possibility of a cortical hemorrhage. At the autopsy the aorta was found moderately atheromatous, the heart was normal, and the left middle cerebral artery contained a thrombus nearly one inch in length and apparently completely occluding the vessel. Nothing was found in the interior of the brain, but in the island of Reil there was a patch of white softening about four-fifths of an inch in diameter. This may not have extended sufficiently deep to account for the motor symptoms, but it was certainly in just the position to explain all the speech symptoms.

Polypoid Spindle-celled Sarcoma of the Uterus.—Dr. George C. Freeborn presented a specimen of the above. It was removed from a woman fifty-one years of age, who was married, but had never had any children. Twelve years ago one of her breasts was removed for cancer, a secondary operation being performed in 1889. The exact nature of this supposed cancer could not be ascertained. The specimen in the fresh state was of an irregular pear shape, and measured 5½ ctm. in length and 3 ctm. in its widest part. On longitudinal section, the mass was found to be composed of a central portion, mottled white and red, and of a fairly firm consistency, enclosed in a capsule which had an average thickness of two millimetres. Microscopical examination of this central mass showed it to be made up of moderately large, irregular spindle-cells, embedded in a loose connective-tissue stroma, and a large number of thin-walled blood-vessels. The capsule was found to be the uterine mucous membrane in a state of chronic endometritis. The pedicle of the tumor was a mass of sarcoma.

Cyst of the Ovary and of the Fimbriæ of the Tube.—Dr. Freeborn also presented specimens of the above. They were removed from a woman forty-four years of age, married, and having one child. She first noticed a "lump" in the lower part of the abdomen two years ago, and this had steadily increased in size up to the time of the laparotomy. The first specimen, the right ovary, showed a cyst 18 × 17 ctm. in circumference, which was filled, in the fresh state, with a clear mucilaginous fluid. The Fallopian tube with its fimbriated extremity were firmly attached to the cyst wall, and both tube and cyst were covered with thin adhesions. A small ovoid cyst projected from the posterior surface of the first cyst. Microscopical examination showed the cyst wall to be composed of fibrous tissue, without any trace of ovarian tissue except at a point just anterior to the tube, where there is a corpus luteum.

The second specimen showed, in the fresh condition, the ovary to be an irregular triangular-shaped mass, 27 × 23 × 13 mm, with its surface deeply corrugated and covered with thin adhesions. The outer two thirds of the Fallopian tube was converted into a thin-walled cyst, filled with a clear fluid. On section, this cyst of the tube was found to be composed of a series of small cysts. Microscopical examination showed the inner third of the tube in a state of advanced catarrhal salpingitis, and the walls of the cysts made up of fibrous tissue lined with cuboidal epithelium.

An Improved Method of Staining.—Dr. J. M. Byron said that in examining bacteria in tissues and in many fluids, the following method of staining would be found less difficult and more reliable than those usually employed: For cover-glass preparations, such as sputum, pus, blood, etc., the cover-glasses are smeared with the

fluid in the usual way, and then directly plunged without drying into a solution consisting of one part each of eosin and bichloride of mercury, and alcohol one hundred parts. They remain in this fluid for about one minute, and are then washed and plunged into a dilute aniline water, *e.g.*, gentian-violet solution, for a minute or two; then in absolute alcohol, xylol, and finally mounted in balsam. Cover glass preparations of blood are beautifully stained in this way, the red corpuscles purplish-red, granules and plates red, and bacteria a deep blue.

Sections of tissues are first transferred from alcohol to the gentian-violet solution for a few minutes, then placed directly in the solution of eosin and bichloride in alcohol. This unstains everything except the bacteria, and the tissues take the eosin, while the nuclei are stained a light purple. Specimens of gonococci are remarkably well double-stained by this method.

Extreme Eccentric Cardiac Hypertrophy.—Dr. Warren Coleman presented the specimen. It was removed from a man sixty-one years of age, who up to two years ago had led an active business life. Since then he had been subject to attacks of vertigo, and had presented most of the symptoms of aortic stenosis and regurgitation, but the gravity of the condition was not appreciated. Only five years ago, he was admitted to a large insurance company. He was a large-built man and well nourished. On the night of his death, he got out of bed to get something out of his coat, when he dropped unconscious, and almost immediately died. A physician was hastily summoned, and he performed artificial respiration, as this had succeeded in a similar attack a few weeks before. Death probably resulted from over-distention of the heart.

At the autopsy, the pericardium was found very much distended and tightly stretched over the heart, the lungs being pushed backward and upward. The left ventricular wall was one and a half inch in thickness, and its cavity somewhat dilated; the heart weighed twenty-eight ounces. The aortic semilunar valves were the seat of a calcareous deposit, varying from one eighth to one-fourth of an inch in thickness. The valvular orifice was small. The aorta held water imperfectly. The mitral valve admitted three fingers with difficulty. The right heart was perfectly normal with the exception of being of a rather light color, probably due to fatty degeneration.

Epithelioma of the Right Labium.—Dr. Coleman also presented a specimen of the above, on account of the comparative rarity of epithelioma in this situation. It was removed from a woman thirty-six years of age, who gave a specific history. About one year ago, she noticed a small pimple on the right labium, which grew slowly until about three months before the operation, when its growth was more rapid. The whole labium was found to be infiltrated, and its inner surface very deeply ulcerated. The specimens which he had placed under the microscope exhibited only one or two epithelial pearls in a series of sections, and at first glance one would consider it a carcinoma, except for a certain regularity of the cells.

Dr. Coleman presented specimens showing "Chronic Cystitis, and Multiple Abscesses of the Kidneys." There was probably a cystitis followed by an inflammation of the kidneys, and the formation of abscesses.

Bronchial Casts in Fibrinous Bronchitis.—Dr. Coleman also presented gross and microscopical specimens of this condition. The patient from whom they were taken was a man sixty-six years of age, who had a good family history, and who had enjoyed excellent health up to the time of this present trouble. Every three or four days he is seized with severe paroxysms of coughing, which terminate after several hours by the ejection of these bronchial casts. In the intervals he did not suffer at all from dyspnœa. He had also an aortic systolic murmur, and some left cardiac hypertrophy, with feeble respiration over the left lung posteriorly, without any change in the percussion note. These bronchial casts are generally found in the young adult female of delicate constitution, and there is very commonly a history of hemorrhages, but this patient gave no such history. Microscopical examination showed a central canal, radiating from which were separate portions of tissue which seemed to be made up of more closely interwoven fibres. Some fibres ran longitudinally, and some transversely, and toward the outer portion there were concentric layers apparently indicating that coagulation had taken place gradually. A number of pus-cells were found in the meshes of fibrin.

Epithelioma of the Larynx.—Dr. Coleman also presented gross and microscopical specimens of epithelioma of the larynx. According to the history, the thyroid cartilage was involved in the disease, and was considerably ulcerated, and the whole larynx seemed to be filled with the neoplasm. The clinical history certainly pointed toward malignancy. There had been some difference of opinion among those who had examined the growth concerning its nature, some maintaining that it was a carcinoma, while others agreed with him in the diagnosis of epithelioma. Immediately after the removal of the specimen, it had been placed in ninety-five per cent. alcohol, and on this account it was greatly shrunken. Microscopical examinations had been made of the outer, inner, and middle portions of the growth.

Several members present examined the specimen under the microscope, and expressed the opinion that it was an epithelioma.

Anthracosis—Small Pleuritic Thickenings.—Dr. J. S. Ely presented the lungs from a case of lobar pneumonia. They were removed from a man about fifty years of age, who was brought by the ambulance to the Roosevelt Hospital in a condition of extreme collapse, and died almost immediately after admission. The autopsy showed the upper portion of the right lung completely consolidated and in the stage of gray hepatization. The visceral pleura was covered with a thin pellicle of new fibrin, besides some thickened fibrous bands from an old pleurisy. With the exception of these slight adhesions, there were none in either lung. A portion of the left lung was deeply pigmented, apparently from the inhalation of coal dust. In addition to this, in very many places over the surface of the lung there are small gray spots, one eighth of an inch or less in diameter, each one of which is surrounded by a small black zone. These spots are slightly irregular in outline, do not seem to be elevated, and are scattered about equally over the upper and lower lobes of both lungs. In the upper lobe of the left lung there are many grayish spots, which are apparently due merely to a fibrous thickening of the pleura. They might possibly be mistaken for miliary tubercles. A microscopical examination shows them to be small areas of fibrous thickening in the pleura, and not in the lung under the pleura. They were unusually abundant in this specimen. In many other specimens they seem to be situated at the points of junction of the lobules.

In 1885, Julius Arnold, of Heidelberg, in an essay on the inhalation of dust, considered the small lymphatic structures scattered through the lungs, more particularly at the angles formed by adjacent lobules, very potent factors in causing these deposits of pigment. The speaker had thought these fibrous thickenings of the pleura might be secondary to the deposits of anthracotic pigment, but he had been in some doubt about this since examining them microscopically, as these gray dots, although surrounded by pigment, apparently have none within them. The thickenings are probably the result of small areas of inflammation on the pleura, which by interference with the circulation, favor the subsequent deposition of the coal-dust.

The President said that he had never seen them except in lungs which were much pigmented. He suggested that they might be secondary to localized inflammations set up by irritating or infectious material brought to the surface of the lungs by the lymphatics.

Dr. Byron asked if these nodules were found to

correspond to any lymphatics or capillaries in the tissue. This was a very important point in pathology, and might furnish a clue to the pathogenesis of the lungs. It was not at all uncommon for these nodules to be mistaken for miliary tubercles. That they are not due to the pigment was shown by the fact that the nodules did not contain any pigment. He had made some experiments in connection with the subject under discussion, and he considered it worthy of close study and investigation. Tuberculosis, anthracosis, actinomycosis, leprosy of the lungs, he considered neoplastic infectious diseases, nearly always due to infection through the lymphatics, and that these nodules represented the first stage. He had found them not only on the surface of the pleura, but deep in the lungs.

Dr. ELY said that these were not simply lymph-nodules which had undergone interstitial change, for those in the immediate neighborhood remain unchanged. There were no tubercles in this patient.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE BRITISH MEDICAL ASSOCIATION—THE HOLIDAY SEASON—THE LOCUM TENENS—MR. ALLINSON'S APPEAL—THE FULHAM SCARLET FEVER CASE AGAIN—THE MATTEI BUBBLE—THE LATE MR. SAMUEL ARMSTRONG LANE.

LONDON, August 13, 1892.

THE annual meeting of the British Medical Association may be said to virtually close the medical year. No professional gatherings of any note will now be held until the autumn, the medical schools are closed, and most practitioners are either thinking of—or are in actual enjoyment of—their annual holiday. No large assembly of members can, therefore, be expected at the extraordinary General Meeting of the British Medical Association, to be held on the 24th inst. The object of this special meeting is to consider, and if thought fit, to confirm, the resolution which was passed at Nottingham, rescinding the prohibition at present existing in the Articles of Association to the admission of duly qualified medical women to the society. The date of meeting is fixed in accordance with the by laws of the Association, which require a resolution of this kind to be confirmed at a general meeting held a few weeks later, and on the present occasion is a very unfortunate one. It is quite possible, under the circumstances, that the decision of the Nottingham meeting may be reversed, though there can be but little doubt of the ultimate issue now that the question has been raised. As one of the speakers at Nottingham put it, women are now admitted to the medical profession, *i.e.*, to a body which is greater than the British Medical Association; it was therefore unreasonable to refuse them admission to the lesser body. It is noteworthy that the extraordinary general meeting is announced to take place in London instead of in Birmingham, where several extraordinary meetings have been held in former years. The Association, however, is becoming more and more of a metropolitan institution, controlled largely by metropolitan influence. This is the more remarkable as it was founded originally as the Provincial Medical and Surgical Association, and the early members were almost exclusively drawn from provincial towns. At the Nottingham meeting the provincial members predominated, as was to be expected from the geographical position of the town, but about a hundred and fifty members came from London and the suburbs of London—a much larger number than at many annual meetings within recent years.

With the advent of the holiday season the question of what is to be done for patients during that time comes to the front. The practitioner wants his holiday, but patients cannot all be persuaded to get well by a certain date, as we have not yet learned the art of regulating illnesses by the almanac. It is at this season of the year that the locum tenens comes into special prominence and asserts himself. He is a recognized institution, and as such must be treated with respect. Most medical men have acted in this capacity for a longer or shorter period before settling down in practice; some continue to earn their livelihood for years by acting for other practitioners. The locum tenens may be classified as good, bad, and indifferent. The absolutely bad ones are few and far between, and usually speedily disappear from medical circles, for the simple reason that a locum tenens is usually engaged through a medical agent and has to give a reference to his last employer. In most cases a locum tenens who has been selected with ordinary care, paid at a fair rate, and sufficiently instructed in the routine of the practice, is as efficient a substitute for the practitioner as a stranger can be expected to be. Occasionally, indeed, he gives offence to his employer from proving too acceptable to the patients, though the old story of the locum tenens who seriously lessened the doctor's income by curing a number of old chronic cases will hardly pass muster now. Sometimes medical friends practising in the same locality agree to act for one another during absence, and this is perhaps the ideal method when it can be arranged. Few men with large practices venture to go away for a holiday without leaving a substitute of some kind, though I once heard of a medical man who practised in chambers in the City, who was accustomed to leave town for several weeks every summer, and never would leave anyone in charge of his practice, letting his patients go to whom they liked during his absence. Consultants generally ask a junior member of their hospital staff to see private patients for them in the holiday season, and juniors often thus add considerably to their income, as it is not uncommon in such cases to give them a share of the fees instead of paying them at a fixed rate.

Two cases of interest to the profession have just been decided in the law courts. Mr. Allinson's appeal to the Supreme Court to prevent the Medical Council from removing his name from the register and publishing their decision, has been dismissed with costs. Mr. Allinson must therefore submit to the Council's ruling, unless he is prepared to take the risk and incur the great expense of taking the matter to the House of Lords. He will probably hesitate to do this, especially as, although we profess to put down illegal practice, there is nothing whatever in our law to prevent his carrying on his practice as before, provided he does not call himself a medical man and assumes no medical titles.

The other medico-legal case concerned the Fulham case of scarlet fever, in which there was such a conflict of medical opinion as to the nature of the illness. The mother of the child appealed against the decision of the magistrate, whereby she was fined ten pounds, with two guineas costs, for obstructing the execution of the magistrate's order for the removal of her child to the Western Fever Hospital. In view of the special circumstances of the case, and the conflicting opinions of the medical men called to give expert evidence, the Home Secretary had remitted the fine and costs. The appeal therefore involved no further practical issue in the present case, and interest vanished from the case entirely when the appellant stated through her solicitor that she would withdraw her appeal if no costs were asked for against her.

The Mattei bubble has at last burst. The Mattei treatment was boomed into notoriety some months ago by Lady Paget, who wrote an article in its favor in a review, which was followed by another by Mr. Stead in his organ, *The Review of Reviews*. Mr. Stead took up the subject with his usual enthusiasm, and proposed that the value of the Mattei treatment should be properly examined by the exhibition of the Mattei remedies, to test cases of cancer under medical supervision. A medical committee was accordingly formed, and the result is what might have been expected. The patients selected as test

ises have gradually got worse, no case being cured or ven markedly benefited. The bubble has finally burst the withdrawal of the Matteists from the experiment.

A link with the past is severed by the death of Mr. muel Armstrong Lane at the advanced age of ninety. Ir. Lane was a surgeon of the old school, and was both skilled anatomist and a dexterous operator. His surcal writings were not numerous, but he edited the new lition of "Cooper's Surgical Dictionary." He was unccessful in his candidature for an appointment at St. eorge's Hospital, so he founded the Grosvenor Place chool of Medicine, a school with which many teachers f note were associated, and where many men who have nce risen to distinction received their medical educaon. He was selected as the senior surgeon to St. lary's Hospital when that institution was founded, in 843, and it is in connection with that institution that he ill be best remembered, for the name of Lane has been onnected with the hospital ever since. A younger rother, Mr. James R. Lane, subsequently joined the surical staff, and his son, Mr. J. Ernest Lane, is at present he junior surgeon.

New Instruments.

A MODIFIED GOTTSTEIN'S CURETTE.

By CARL E. MUNGER, M.D.,

CLINICAL ASSISTANT MANHATTAN EYE AND EAR HOSPITAL, THROAT DEPARTMENT, NEW YORK.

THOSE who have used Gottstein's ring knife for the removal of "adenoids" from the naso-pharynx, have found it of the greatest convenience and utility, by reason of its ease of introduction and manipulation. It is an instrument which can ordinarily be used without the aid of anæsthesia, and the further advantages possessed are its adaptability to patients of all ages, the absence of danger of harming surrounding tissue, and the thoroughness of removal of the adenoid vegetations.

In a recent number of the RECORD is an excellent article by Dr. Frank E. Miller on the "Removal of Adenoid Vegetations from the Vault of the Pharynx" by "Gottstein's new improved curette." A still further modification of this most useful instrument, and one which I have found to be in every way satisfactory, is reached by having the instrument so made that, while preserving the general contour of the "improved Gottstein," the distal portion of the ring, instead of having a slightly convex or nearly flat surface, has its form so changed that the ring presents a heart shaped appearance, as seen in the accompanying cut. The advantage of this is that the curette can be made, as it were, to straddle the posterior edge of the nasal septum and by so doing allow the two wings of the "heart" to reach into the choanæ. By this means the curette can be brought farther forward and the space more thoroughly cleared than by any other form of the ring-knife.

A somewhat similar instrument was recently shown by Professor Adam Politzer, of Vienna, at a meeting of aurists in London, but, so far as I know, this shape has not been used in this country.

I have found this modification of Gottstein's "ring messer" or curette to be very satisfactory in the removal of adenoids, and take great pleasure in recommending it to those using like instruments. This form of the curette can be found at Meyrowitz Bros., instrument makers, New York.

The International Congress of Anthropology was held in Ulm, Bavaria, during the week ending August 6th.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending August 27, 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	42	14
Scarlet fever	40	4
Cerebro-spinal meningitis	1	1
Measles	73	8
Diphtheria	58	16
Small-pox	11	1
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0
Mumps	0	0

The Efficacy of Medical Parliaments.—The Berlin correspondent of the *Occidental Medical Times* writes: Five years ago the institution of Medical Councils (*Aerztekammern*) was founded in Prussia, as a sort of special parliament for the medical profession of each of the provinces, for the purpose of discussing all important questions pertaining to medical affairs, both scientific and civic. It was hoped that these assemblies would prove of great value as the official mouth piece for the wishes of the whole body of physicians throughout the land, looking after our special interests, giving advice to the government authorities on numerous important questions, etc. The representatives are elected by general ballot. Hitherto they were devoid of any executive powers whatever, but it is now proposed to invest them with certain judicial and punitive functions for the furtherance of medical ethics and etiquette, in analogy to the similar institution already existing for lawyers in Germany; a sort of court of honor which shall put down all dishonorable dealings and such infringements of the ethical code as do not come within the range of civil law. The proposal has excited a most animated discussion, both in the Berlin Medical Society as well as generally in all larger cities. In Berlin the measure was very heartily condemned by a large majority, while in other parts a great number of votes are recorded in its favor. There can be no doubt that there is a large field for amelioration among medical practitioners, but it appears questionable whether this is the right way to insure it. Altogether, as regards the work done by the *Aerztekammern*, the opinion is rather prevalent that their utility is somewhat problematic. The organizers and adherents were, therefore, all the more gratified and fortified by the resolution recently accepted in Austria of introducing there a similar arrangement; a measure which was supported in the upper house by Billroth in most enthusiastic and hopeful terms. After all, it seems not improbable that the contemplated innovation will take place in Germany sooner or later.

Cimicifuga in Uterine Disorders.—Dr. Boardman Reed says: Ten to thirty drops of the fluid extract after meals are used to cure seminal emissions. This has rarely failed in my experience. Half a grain to a grain of the resinoid, cimicifugin, twice a day, has occasionally been found useful in conditions of nervous depression, hysteria, and incipient melancholia. Five to twenty drops of the tincture, several times a day, have proved very helpful in scanty menses, especially in maiden ladies; but if repeated as often as every three hours, even, are likely to cause severe headache. This untoward effect I have never seen from the largest doses, such as half a drachm or drachm of the fluid extract three times a day. Such doses are said, however, to produce headache sometimes. Very small doses, as one-quarter of a drop up to one drop of the ordinary tincture, repeated every one or two hours, will often promptly relieve a frontal headache

due to mental fatigue, or any kind of a headache resulting from pelvic congestion at the menstrual period in women. The same doses are often efficient in preventing abortion when threatened from weakness or passive congestion of the uterus, or from habit at a certain stage of pregnancy. Two or three drops of the tinctures of cimicifuga and gelsemium—sometimes one drop of each—every hour or two, are among the most certain means of bringing on the menstrual flow when delayed by passive congestion, cold, grief, or other similar cause, and acts similarly with the lochial discharge after parturition. Dragging pelvic pains arising from the same causes may be relieved by the same combination.—*American Therapeutist.*

Twice too Many Doctors in the United States.—Up to the present time the number of medical colleges has increased out of all proportion to the increase of population. Of 130 schools, less than a dozen are endowed. The number of practitioners is greatly in excess of the legitimate demands of the people. We are reliably informed that in the decade ending with the year 1890 the colleges of the United States matriculated 115,355 students, and graduated 39,996. This is an average of 4,000 yearly—in my opinion more than twice as many as the requirements of the people demand. As a final argument in behalf of adequate medical legislation, I beg to submit the following statistics, based upon the proportion of physicians to the inhabitants in a few of the European countries :

Ratio of Physicians to Population.

Sweden	1 to 7,000
Italy	1 to 3,500
Germany	1 to 3,000
Austria-Hungary	1 to 2,400
France	1 to 2,000
United States	1 to 600

—Dr. Millard, in *Medical News*.

Southern Medical Education.—The *Atlanta Medical and Surgical Journal* has patriotically started upon the task of awakening Southern medical colleges to the sense of their unfitness. It publishes this list of applications for licenses before the Medical Boards of Virginia and Alabama :

Whole number applied	647
Whole number granted	559
Whole number rejected	88
Percentage of rejections	13.50
Percentage of rejections of graduates Western Medical Colleges	19.40
Percentage of rejections of graduates Southern Medical Colleges	13.01
Percentage of rejections of graduates Northern Medical Colleges	9.45
Percentage of rejections of non-graduates	28.57
Percentage of rejections of graduates (College unknown)	33.03
Percentage of rejections of foreign graduates	0.00

Antisepsis in Typhoid.—Among forty four cases of typhoid fever one half were treated antiseptically, the other expectantly, by Dr. R. Caton (*British Medical Journal*). Here is the result :

	Deaths.	Days of fever.	Days of relapse.	Days in hospital.
Expectant treatment	4	37.9	9	52
Intestinal antisepsis	....	25.3	1 8	46

Dr. Calvin says : "Watching these cases from day to day, I have been much impressed by the apparent good effects of the intestinal antiseptic treatment. It is obviously a rational method. There is considerable evidence that such bodies as chlorine, creasote, naphthalin, iodine, iodoform, and alpha- and beta-naphthol are destructive to septic and poisonous compounds and organisms found in the intestinal canal. It is, therefore, antecedently probable that they would be of service."

Dr. Behring on Blood-serum Therapeutics.—Dr. Behring, of Koch's Institute for Infectious Diseases, well known for his studies on immunity against traumatic tetanus and diphtheria, has published a treatise on the practical aims of blood-serum therapeutics, and the methods of producing immunity, in order to obtain medicinal serum. He endeavors to prove that the blood-serum of animals rendered immune by treatment with cultivations acted on by trichloride of iodine cures other animals infected by the disease and renders healthy ones immune. He has applied this method with success against traumatic tetanus and diphtheria, and now states that one of his fellow-laborers has been equally successful in diseases caused by streptococci. All these results have been obtained by experiments on animals, but Behring's final aim is to find a new means of combating diphtheria, tetanus, etc., in the human body, and he indicates the way to that great end, admitting, however, that it is a difficult and especially a very costly one—too costly for individual investigators or even institutions to enter on without ample pecuniary aid. In the second part of his treatise he criticises other methods of producing immunity. The treatise is published by Thieme, of Leipsic, and its title is "Die praktischen Ziele der Blutserum-Therapie und die Immunisirungs methoden zum Zweck der Gewinnung von Heilserum."

Asthenia from Child-bearing.—J. G. Perry (*New York Journal of Gynecology and Obstetrics*, April, 1892) endeavors to show, from an analysis of seven cases under his care, that in certain women there is a predisposition from unknown causes to yield their vitality in the natural processes of child-bearing in such a manner as to interrupt the retrograde metamorphosis or involution of the pelvic cellular tissue independent and apart from the muscular fibres, and that any interference with this metamorphosis tends to atrophy and fatty degeneration, which cannot be arrested by any known method of treatment. From this atrophy the pelvic organs and those above the pelvis lose their proper support, and provoke certain sensations and mental phenomena. Dragging pains, abdominal cramps, and pain on walking are the chief symptoms. Great mental depression is frequent. Plastic operations and massage prove unavailing; indeed, Perry considers that many of these cases do not yield to any form of treatment. These patients are, of course, quite unfitted to bear more children.

BOOKS RECEIVED.

What to Do in Case of Accident. By B. M. Ricketts, M.D. 12mo, 61 pages, illustrated.

The Wife and Mother. A Medical Guide. By Albert Westland, M.D. 8vo, 282 pages. Price, $2. P. Blakiston, Son & Co., Philadelphia, Pa.

The Diseases of the Stomach. By Dr. C. A. Ewald. Translated by Morris Manges, M.D. 8vo, 497 pages, illustrated. D. Appleton & Co., New York.

Fourteenth Annual Report of the Board of Health of the State of Connecticut. Year ending November 30, 1891. 8vo, 202 pages.

Transactions of the Eighth Annual Meeting of the American Climatological Association. September, 1891. 8vo, 276 pages. W. B. Saunders, Philadelphia, Pa.

Temperament, Disease, and Health. By French Ensor Chadwick. 12mo, 85 pages. G. P. Putnam's Sons, New York.

Cardiac Outlines for Clinical Clerks and Practitioners. By W. Ewart, M.D. 12mo, 165 pages, illustrated. Price, $1.50. G. P. Putnam's Sons, New York.

Essentials of Diagnosis. By S. Solis-Cohen, M.D., and Augustus A. Eshner, M.D. 12mo, 382 pages. Price, $1.50. W. B. Saunders, Philadelphia, Pa.

Public Health Papers and Reports Presented at the Nineteenth Annual Meeting of the American Public Health Association. Vol. XVII. October, 1891. 8vo, 321 pages.

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Original Articles.

THE ETIOLOGY OF LEPROSY.

By GEORGE L. FITCH, M.D.,

FORMERLY MEDICAL SUPERINTENDENT OF KALAWAO LEPER SETTLEMENT, ISLAND OF MOLOKAI, HAWAIIAN ISLANDS; ALSO OF KAKAAKO BRANCH LEPER HOSPITAL, HONOLULU; AND PHYSICIAN AND SURGEON IN CHARGE OF GOVERNMENT FREE DISPENSARY, HONOLULU.

WHAT is leprosy, and what causes it? The answer, I believe, is: A fourth stage of syphilis, which stage occurs epidemically in races virgin to syphilis, or sporadically in persons whose systems have reverted to a condition virgin to the disease, and occurring also in those presenting a distinct neurotic taint, and whose habits have been such—in regard to food-supply and manner of living—as would without the before stated conditions produce ordinary scrofula.

The effects which follow the introduction of a disease into a race for the first time have been but little studied, and that individual members of a race can revert to a condition virgin to any disease is an idea which, I believe, has never before been advanced. Yet, to my mind, if a person can come into this world a subject "of inherited immunity" from any disease, or with the effect of any disease mitigated by reason of his ancestors having been repeatedly subjected to its influence, the converse of the proposition must also hold true, that a person's ancestors having escaped contamination for generations, a period will certainly appear when the descendants of such ancestors will again be in a condition where their animal economy will be virgin to such disease. Pasteur's experiments have taught us that the virus of disease may be both diluted so as to cause mild, and intensified so as to produce malignant, forms. Do we not here touch on a law of the utmost importance in relation to all maladies?

As to what follows the introduction of various forms of disease among virgin races, I wish to quote from authorities and present instances. Gee[1] quotes, with approval, the words of Trousseau: "No physician has ever seen a child who has died of chicken-pox." If the gentlemen who wrote those words had been on Bear River, in Humboldt County, Cal., in the year 1868, they would not have written as they did. An epidemic of varicella which swept over that region at that time was no more hurtful to the whites settled there than the writers quoted state it to be, but in a rancheria of Digger Indians in the neighborhood there were not enough inhabitants left alive to bury their dead—all swept away by this, to them, fell destroyer. The ravages of small-pox and measles among the aboriginal races of various parts of the world, when first subjected to the effects of these maladies, are well known, and, further on, I propose to introduce evidence as to what follows the introduction of syphilis among such peoples. Quoting from authorities on this subject,[2] J. C. White, M.D., says: "Nor can we overlook the proclivity of all epidemic diseases to extraordinary manifestations of virulence in insular nations not previously protected by gradual inoculation." Bumstead and Taylor say:[3] "In all countries where syphilis has existed for many years its course is much less severe than it was originally, and the disease of to-day is really mild in comparison with what it was when it was first observed in Europe. It is well established that syphilis is especially malignant when appearing for the first time in a community. Numerous instances were recorded of the frightful ravages produced by it under such circumstances. The initial lesions are said to have been phagedenic and to have been followed by severe secondary symptoms; while necrosis and visceral lesions were almost invariable and precocious. This malignancy gradually diminishes in successive generations, until a comparatively mild form of the disease is established. It seems that a certain protective influence is secured to progeny by the occurrence of syphilis in their ancestors, which, although not conferring absolute immunity, decidedly modifies the course of the disease.

Thus our ideas of the nature of syphilis are free from that fear with which our forefathers were accustomed to regard it, and we no longer look upon it as "an incurable disease." Jonathan Hutchinson, F.R.S., in "Reynolds's System of Medicine," edited by Hartshorne, vol. i., p. 427, says: "Fourth, of yet wider importance is the question as to the *influence of disease in the parent in affording protection, partial or complete, to the offspring.*" If we grant, as we must, the two postulates—first, that syphilis is transmissible to offspring, and, second, that it is protective for a certain time against second contagion, then we are obliged to admit that just as the disease itself may be transmitted so may the immunity which it affords. Here, again, we have, as yet, very little clinical evidence on which to build, but what we do possess certainly favors the view that those who have suffered severely in infancy from inherited disease are, to some extent, protected. In the history of congenital syphilis, however, nothing is more common than to meet with such cases in which the eldest child in a family suffered severely in infancy, the second slightly, the third still more slightly, and the others not at all. I have at present several families under observation in which this has been the case, and in which all the children have lived, and the intervals between them are but short. The younger members of such families often appear to be in robust health. Now, if in such cases the oldest enjoys immunity, probably the second also does so in some degree, and so on through the whole, the degree of protection diminishing in ratio to the distance from the original taint. Do we not here touch upon a law of the utmost importance, not only in respect to syphilis, but to its congeners also? Is it not probable that a very considerable portion of the community, being the descendants of those who have suffered, enjoy, in a certain degree—infinitely slight in many but powerful in others—immunity from further attacks? The manner in which a slight degree of inherited immunity would become manifested would probably not be in the entire escape of the contagion, but in the production of a much milder form of the disease. This is what occurs in cases of small-pox after vaccination, or after a previous attack of the true disease, and, indeed, in second attacks of any of the specific fevers. It is surely impossible to believe that the constitution of a person who has passed through the stages of any of these diseases ever again returns into precisely the same condition in relation to the virus in question that it occupied before; and it is equally inconceivable but that some share of this peculiarity shall be transmitted to offspring. A child born of parents neither of whom is liable to small-pox or syphilis, as the case may be, must be in a different position, as regards those diseases, from the child of parents both of whom are liable. In like manner, a half result ought to be ex-

[1] Reynolds's Practice of Medicine, vol. i., p. 127.
[2] Pepper: System of Medicine, vol. i., p. 788.
[3] The Pathology and Treatment of Venereal Diseases, p. 496.

pected where one parent is exempt and the other liable. Now it is a matter of well-known observation that any specific disease will be especially severe when imported into a community previously free from it. The ravages of small-pox in a virgin race are something far beyond what is ever known in a community long accustomed to the disease. There are also good reasons for believing that syphilis has become, during the last two centuries, a milder disease than it was when it first invaded Europe. This amelioration we may most satisfactorily explain by recourse to the hypothesis above suggested.

Now turning to the second point, the system reverting to a virgin condition. I quote from "Genito-Urinary Diseases with Syphilis," by Van Buren and Keyes, p. 539: "In 1865, in the cutaneous wards of St. Louis Hospital, under Professor Hardy's care, were two cases, man and wife. The man had severe malignant syphilis, with large gummy deposits in his skin, some of them ulcerating, all occurring within a few months after the chancre. She had a very mild papulo-erythematous syphilide, bearing none of the characters of malignancy. The woman from whom the man acquired his disease was sought and found. She, also, had a simple case of ordinary mild syphilis. The poison in these three cases was identical, handed directly from one to the other, but the results were so widely different that it would have been hard to convince a layman of their identity of origin." What the idiosyncrasy is which makes syphilis bad in one case and light in another cannot be affirmed. Does not the theory of one's system reverting to a condition virgin to disease, or "inherited immunity," for the first idea is the complement of the last, explain the case quoted and similar cases; that is, the varying degrees of the severity of diseases, in a manner not otherwise explainable?

I have no other case at present to quote on this point, as I am not aware that the subject has ever been even mentioned by any previous writer.

Now let us inquire more closely into what really happens on the introduction of a disease to a virgin race. Turn we to an old volume, entitled "Narrative of a Voyage Performed by Captain Cook and Captain Clarke in His Majesty's Ships Resolution and Discovery:"[1] "Many who were alongside in their canoes pleaded hard to come on board, but Captain Cook had given strict orders, previous to his anchoring, not to suffer a single woman to be admitted into the ships, as there were several people in both who still had the venereal disease. But notwithstanding every precaution, many of our men contrived to have connection with them, in consequence of which we found this terrible disorder raging among them when we arrived there the second time."

From Jarvis's "History of the Sandwich Islands," page 108: "During the visit, which lasted but a few days, the commander manifested a laudable humanity, in endeavoring to shield the population from the evil effects which so inevitably result from connection between foreign seamen and the native females. But his efforts were in vain. If the discipline of his own crew could have been strictly enforced, the eagerness of the women was not to be repressed. The native history thus accounts for its commencement, by which it will be seen that however praiseworthy the motives of the commanders of those expeditions may have been, the licentious habits of the natives themselves were sure to counteract them." Further on Jarvis says of a female chief: "Accordingly she sent her own daughter on board, who returned with the seeds of that disease, which so soon and so fatally spread itself throughout the group." That syphilis should so soon have become almost universal will not seem strange when we consider their habits. Jarvis says on this subject, page 73: "The ceremonies observed on the death of any prominent personage were extremely barbarous. . . . Gambling, thefts, and murder were as open as the day; clothing was cast aside as a useless encumbrance; drunkenness and promiscuous prostitution prevailed throughout the land; no women, except the widows of the deceased, being exempt from the grossest violation. There was no passion, however lewd, or desire, however wicked, but could be gratified with impunity, during the continuation of this period, which, happily, from its own violence, soon spent itself. No other nation was ever witness to a custom which so entirely threw off all moral and legal restraints, and incited the evil passions of men to unrestricted riot and wanton debauchery." On page 90: "As a general thing, there was no such sentiment as chastity; sensual desires were gratified as choice prompted; their only rules being their wishes, modified by jealousy or fear. Visitors of equal or greater rank than their hosts were accommodated with women as a necessary exercise of hospitality. . . . The family alliances, or more properly speaking, connections, were of the most intricate and shocking nature. Custom obliged the highest chief to marry the next in rank, consequently brothers and sisters, own cousins, nieces and uncles, nephews and aunts, frequently exercised toward each other the relations of husband and wife."

Among a people with habits and customs such as these syphilis was introduced, as we have just seen, by Captain Cook and his associates, in 1778. Let us note the results:[1] "Dr. Chapin, in the *American Journal of the Medical Sciences*, says: 'With such an introduction the venereal disease has for the past fifty-seven years continued to spread and increase, perpetuated and extended, too, by almost every vessel which touches at the islands, till words fail to express the wretchedness and woe which have been the result. Foul ulcers, of many years' standing, both indolent and phagedenic, everywhere abound; and visages horribly deformed, eyes rendered blind, noses entirely destroyed, mouths monstrously drawn aside from their natural positions, ulcerating palates, and almost useless arms and legs, mark most clearly the state and progress of the disease among that injured and helpless people.' Rev. Artemus Bishop remarks: 'Their previous looseness of morals formed a ready conductor for the disease, which was introduced by the first ship which touched here; and, from the account given by the natives themselves, the consequences were incalculably more dreadful than had been feared by Captain Cook and his associates. The deadly virus had a wide and rapid circulation throughout the blood, the bones and sinews of the nation, and left in its course a train of wretchedness and misery which the very pen blushes to record. In the lapse of a few years a dreadful mortality, heightened if not induced by their unholy intercourses, swept away one-half the population, leaving the dead unburied for want of those able to perform the rites of sepulture.'"

Among the documents sent out by the Hawaiian Government in 1886 is one bearing the title of "Leprosy in Foreign Countries." On page 172, in the report of a "Discussion before the Academy of Medicine, Paris, on the Transmissibility of Leprosy,"[2] "M. Jules Rochard observed that, in his opinion, it was not certain that leprosy had been imported into the Sandwich Islands in 1848, since M. Quoy had seen it there since 1819, when he made his voyage of circumnavigation."

The diary of Rev. Charles Stewart, one of the early missionaries to Hawaii, under date of May 22, 1832, says: "Not to mention the frequent and hideous mark of a scourge which, more clearly than any other, proclaims the curse of a God of purity, and which, while it annually consigns hundreds of this people to the tomb, converts thousands, while living, into walking sepulchres, the inhabitants generally are subject to many disorders of the skin. The majority are more or less disfigured by eruptions or sores, and many are as unsightly as lepers. The number of either sex, or of any age, who are free

[1] London, 1782, by W. Ellis, Assistant Surgeon to both vessels, vol. i., p. 170.

[1] New York Journal of Medicine for March, 1855. Article by L. H. Gulick, M.D., on Climate, Diseases, and Materia Medica of the Hawaiian Islands.

[2] Le Temps, Paris, October, 1885.

from blemishes of any kind is very small, so much so that a smooth and unbroken skin is far more uncommon here than the reverse is at home."

Further on Mr. Stewart says: "July 4, 1823. Indeed, we seldom walk out without meeting many whose appearance of misery and disease is appalling, and some so remediless and disgusting that we are compelled to close our eyes against a sight that fills us with horror. Cases of ophthalmic scrofula and elephantiasis are very common." Commenting on these quotations, Arthur Mouritz, formerly physician to the Kalawao Leper Settlement of Molokai, Hawaiian Islands, says, in the "Appendix to the Report on Leprosy of the President of the Hawaiian Board of Health for 1886:" "That the author means elephantiasis græcorum, or true leprosy, and not elephantiasis arabum, is quite apparent. The appearance of the latter has no parallel with that of the former. And, again, elephantiasis arabum has never been known to have existed here. It remains, therefore, that the elephantiasis of the passage is true leprosy, such as prevails at the present time among the islands of the group." In these conclusions of Dr. Mouritz's I fully concur. In a former paper, which was published in the *Pacific Medical and Surgical Journal* and *Western Lancet*, under date of October, 1885, I have shown that leprosy existed throughout the entire Hawaiian Islands in 1835, and from the statements just quoted it would seem to have been present as early as 1819, or forty-one years after syphilis was introduced.

But let us now turn to other quarters to seek enlightenment on this matter. Rev. A. A. Sturges, who went to the Caroline Islands as a missionary in 1851, said to me that on his arrival there he found syphilis, but it was not very common, while now it is all but universal. As whalers began to visit Ponape the disease became more and more common, and worse and worse in its effects. On his first visit there he found cases in which fingers and toes were dropping off; but such cases were uncommon, and, later on, the tubercular form of the disease began to appear. Mr. Sturges never knew a white man to have the disease there until years after it was common among the natives; and not a Chinaman had ever visited the group until years after the natives were extensively affected. The whites first settled there in 1840. Now, Mr. Sturges thinks, about one in twenty of the natives are lepers. In the year 1856 Mr. Sturges first visited the island of Pingalap, lying about one hundred and forty miles from any other land, and found the people of that island, as he expressed it (the inhabitants were naked savages, giving the fullest opportunity for examination), the cleanest-skinned persons he ever saw in his life—this expression he repeated twice to add to the emphasis. In 1860 Mr. Sturges visited them again. During this interval of four years, some whalers had called, and on his second visit Mr. Sturges stated that he found them terribly diseased with syphilis. He described their condition at this time as truly pitiable. In 1871 Mr. Sturges visited them for the third time, and found leprosy prevalent. This account is from notes of an interview with Mr. Sturges, held in Honolulu, October 28, 1885.

Still again, on page 254 of a book called "New Zealand and its Inhabitants," by Rev. R. Taylor, I find this written:

"Some of these persons were afflicted with insanity and partly leprous. . . . Scrofulous diseases are now general among the natives; originally introduced by Europeans, they are now naturalized in the system, and have become a chief cause of mortality among them."

September 11, 1890, I saw a Digger Indian squaw at Ukiah, Mendocino County, Cal., who was a leper. Both her thumbs had dropped off, at or near the metacarpo-phalangeal articulation. The middle finger of the left hand had lost the bone at the first joint, and the nail was gone. The rest of the fingers were clubbed, and the nails were mere rudiments. The right hand was further advanced, the fingers being all mere stubs. Above the wrist, on the inner aspect of the forearm, was a scar reaching half way to the elbow. The entire palmar surfaces were of a dirty white color. At the inner part of the left eyebrow was a macular spot, showing a pink color instead of the dark natural hue; this spot was about the size of a nickel. Both lower eyelids were ectropic; the left foot was greatly swollen, and on the plantar surface was a perforating ulcer fully two inches in diameter. I could not succeed in getting any more of an examination. She was sitting on her right foot, and positively refused to let me examine her further. She was in a rancheria by the side of a moribund man—a patient with double pneumonia, and she and some twelve or fifteen more were waiting for the breath to leave his body to begin their death-wail. I did not see any other cases of leprosy among these persons, but, of course, could not make a close examination. In December, 1870, I amputated the arm of a leprous squaw in Humboldt County, Cal. At the time I did not recognize the disease, but, on becoming fully acquainted with it in Hawaii, there could be no doubt but that which I thought was an old scrofulous sore hand, for which I did the operation, was leprosy. Dr. L. E. Meeker, of Brooklyn, N. Y., formerly of Arcata, Humboldt County, Cal., assured me that he had an Indian there who had leprosy. He (Dr. Meeker) also did not recognize the disease as leprosy until familiarity with it in Hawaii enlightened him. I have heard of other cases among the Digger Indians where fingers and toes dropped off, but on account of the patients not having been seen by a medical man, make no account of them. A systematic inspection of the Indians of the Coast would be very desirable in this matter.

Turning from the general view of the subject to special cases, the histories of some of which came under my observation in Hawaii, may help to a clearer understanding of our study.

Case I.—Israel F——, a German, aged fifty-six, first came under observation in January, 1882, when he consulted me about an anæsthetic spot on his forearm. His statement was that in November, 1858, he had a single sore on his penis after illicit intercourse with a native woman. No clear history of symptoms—except general ill health which before had been good—until 1862, when severe nocturnal headache set in; this continued almost without cessation for six years. It was distinctly nocturnal, beginning after he would get warm in bed and continuing until near morning, when he would get a short period of sleep. During this same time his mouth was drawn around toward the right ear—paralysis of facial muscles. After enduring his sufferings for six years, during which time he never had any regular medical advice, he left Hawaii and came to California, where, after a year spent in the mountains, he improved somewhat and then returned to Honolulu, but he was never as well as he had been previous to the time of having the chancre. In January, 1881, he was vaccinated in the usual place on the left arm with bovine virus obtained from Martin of Boston. There was no doubt about the source of the virus, so there could be no chance of infection from that direction. Yet within three weeks after the vaccination, which took well, an anæsthetic, or rather an analgesic, spot appeared on the flexor aspect of the left forearm, just above the carpal region, about two inches wide by four long. Gradually afterward his face took on the flushed, swollen appearance of leprosy. The little finger of the right hand, on the external aspect, and the hand, also, in the same region, became extremely hyperæsthetic, so much so that even drawing a feather lightly over the surface caused him much pain. Examination, when he came to me, showed marked enlargement of both epitrochlear glands, slight of posterior cervical chain, left side, and of "Ricord's pleiad," both sides. While under my observation his face became greatly swollen, taking on the well known leonine appearance, the nocturnal headache returned by

spells, and the mouth was again drawn around toward the right. Notice of the latter event brought out the fact of its previous existence. A large abscess formed just posterior to the upper portion of the sterno-cleido-mastoid muscle, which was long in healing. He became an inmate of the Leper Hospital, near Honolulu, where he finally committed suicide.

Case II.—M——, was a native of New York, which State he left to escape the attentions of the Sheriff, and, after a period of wandering, brought up in Honolulu. There he cohabited with two native women, sisters. By one he had one child, by the other, two. F. M——, one of the children, when about twenty years of age, had a sore on his penis after illicit intercourse with a native woman, followed by general syphilis. While in the early secondary period he married a half-caste girl, whose father showed plainly the marks of ancient syphilis. The daughter who married F. M ——, had, when about fifteen years of age, an illegitimate child by a physician who formerly lived there. When the family came under my observation, in 1882, this illegitimate child was twelve years of age. Below her left knee, on the anterior surface of the leg, and just above the right mamma, were spots, each somewhat more than an inch in diameter, which presented the appearance described by Bumstead and Taylor in their work, "Venereal Diseases," page 605, under the heading, "The Pigmentary Syphilide." They present the peculiar appearance aptly conferred by Fournier to a "net-work of lace with large meshes." Besides this she had marked epitrochlear and post-cervical adenopathy, but no distinct symptoms pointing to leprosy. The children of F. M—— and his wife, four in number, each, in succession, as soon as the permanent teeth appeared, became lepers. The eldest, about ten years old when I first saw her, was a marked case. The next was not at first as clearly marked, but soon she also became a bad case. The third soon followed in the same footsteps, and, in December, 1885, when I left Honolulu, the youngest child, a boy about six years old, was just showing unmistakable signs of the dread plague. F. M—— was an opium-eater and had been arrested for forgery and I know not how many other offences. He, his wife, and the illegitimate girl, all lived with the leprous children, all occupying one bed—mats spread on the floor—where they all bunked promiscuously, having but one room for all purposes. They all ate from the same dishes, and the two eldest girls wore the same clothes. This was continued for years, yet the parents and half-sister escaped the disease. Owing to the father's bad habits, the family lived in want of the commonest necessities of life, having hardly food enough to support nature, and that of the poorest quality. Can anything be clearer than the fact that the leprosy here was the result of the mother's inherited syphilis and the father's acquired, together with the wretched condition of the father's nervous system and the family surroundings?

Case III.—C. S——, native of Pennsylvania, aged forty-two, came under observation July 6, 1882. He gave the following history: In 1867, while residing in Tahiti, after intercourse with a native woman, he had a single sore on his penis just back of the corona, in the sulcus. This caused him but little pain and there was no discharge from it. It was followed by a bubo which did not suppurate. In 1868 he went to the Island of Borabora, and while there discovered that the middle finger of his left hand was analgesic, and during the latter portion of the year he had bad spells of chills and fever, and bones paining him all over, which he took to be rheumatism. In 1874 he was at Palmyras Island, where he was seen by Dr. White, of the United States Navy, who told him he had syphilis. Dr. White came to Honolulu, where I saw him, and he told me that he remembered S—— well, and in 1874 S—— was suffering with syphilis. During all these years S—— was leading a drunken, dissolute life, and had no treatment for his disease. He stated that his left ear became sore and a portion of the lower lobe sloughed off. He accounted in this way for its being much smaller than the right. It was also analgesic. His left testicle also swelled and became as large as a goose egg, and very hard. In 1877 some of the toes on his left foot became analgesic, and finally the entire foot was in the same condition. Later, the right foot and leg up to the knee had intermittent spells of numbness. In 1878, while in Honolulu, he was recognized as a leper and sent to Kalawao Leper Settlement on the Island of Molokai. When I first saw him the hair on his head was thin, generally, and eyebrows gone; whiskers very scant. There were leprous tubercles on his face and breast, and a spot about eight inches in diameter above and to the left of the umbilicus, which was of a nearly dead white color surrounded by a bronzed or rather raw-ham-colored areola. This spot was analgesic. Both hands and arms half-way to the elbow, and the feet and legs nearly to the knees, were the same. He was thin and cachectic, presenting in a marked degree the appearance commonly known as "Buzzard's muddy pallor." Much of the time he was confined to his bed and seemed about to die. Under the use of fuming nitric acid, ninety minims a day, well diluted, he gained thirty pounds weight in a short time, but the analgesia and tubercles remained much the same. In March, 1884, he had an attack of iritis of the right eye, which had been progressing a week before I saw it. The iris was grass green, and belladona produced only a very slight and irregular dilation accompanied with much pain, synechia having formed. The pain rapidly disappeared under the use of small and oft-repeated doses of calomel and opium, but sight in that eye was limited to perception of light. A few months later the left eye became similarly affected, when I had him removed to Kakaako Hospital, Honolulu, where Dr. J. Brodie did a double iridectomy with good results for the time, but the incision in the iris soon blocked up with exudative material and a second operation became necessary, which left him with sufficient vision to find his way around the hospital yard. A circular aperture formed in the septum nasi large enough to admit the little finger. Afterward, ulcers appeared on the right side of his face, from the mouth back to the ramus of the inferior maxilla, which became covered with thick oyster-shell-like crusts, and his general health again broke down. In 1883 he showed many of the symptoms of locomotor ataxia. Standing with his eyes closed when his heels were together was very difficult. He was greatly troubled with darting pains, felt more especially in his extremities. His sexual desire disappeared, and it was difficult for him, without seeing them, to hold things in his hands. This was probably caused, to a large degree, by his loss of the sense of touch. He stated that when he put his hands in his pocket for anything he was unable to tell from the sense of touch whether he had his penknife or a ball of wool in his hand. In walking he could not feel his feet touch the ground, so that it was difficult for him to walk after dark. In these particulars he was not different from other lepers having analgesic symptoms well marked. In fact, many of the ear-marks of leprosy are the same as those of locomotor ataxia, with the exception that nature seems hardly capable in leprosy to carry out the nervous symptoms to the same pitch of development.

Case IV.—K——, male, aged forty-six, had non-suppurating buboes followed by sore throat and severe nocturnal rheumatism. Kamalii, his wife, aged forty, contracted syphilis shortly after marriage, which occurred twenty-one years before. Their first child was still-born. The second had destructive ulceration of the mouth which left the lower jawbone exposed—this child died, aged six months. Third child had sore nose and snuffles—died at two months. Fourth child—one eye ran out and it had snuffles; lived two weeks. Fifth child—still-born. Sixth child was given away to a friend and lived eight months; no history (natives frequently give their children away). Seventh child died at one month; could

never eat; had snuffles and shrunk away and died. Eighth child given away; died at one month. Ninth child also given away; died at two weeks. Tenth still-born. Eleventh labor, twins, both children girls. The first, born during the night, died at sunrise. The second had snuffles, but survived; at the approach of puberty, when she was over twelve years old—one cheek began to get red and swollen as if she had received a blow, although she had not met with any injury. Then papules, gradually increasing in number, began on the cheek, and soon by aggregation, formed a plaque which involved the entire right cheek and extended to the bridge of the nose. There was another of these plaques on the left leg, on the anterior aspect, just below the knee. I watched the case for several months and saw a few papules on the left forearm grow in number, coalesce and form a plaque. The parents told me those on the cheek and leg began and reached the proportions they exhibited when I first saw the case, in the same way. They were of a dull red-brown color, hard and brawny to the touch and insensitive to the prick of a pin. The papules were of pin-head size, acuminate, hard, and a slight scurf was on each, so, as they became numerous enough to form a plaque, the surface was slightly furfuraceous. The girl was a leper.

Case V.—Liwai, aged sixty-three, a native, came to the Government Dispensary in Honolulu with syphilitic necrosis of the lower jaw. With the kind assistance of Dr. G. Ollino of San Francisco, then on a visit to Honolulu, I removed the sequestrum, which involved the parts from the symphysis back to the ramus. The history the patient related was, that in early manhood he contracted syphilis from a native woman, and, shortly afterward, while his disease was in an active condition, he married. The first child, a son, had sores break out on the hairy scalp and over the buttocks, when he was six weeks old. He was taken to Dr. Hillebrandt, who applied some dark colored ointment and kept the child under treatment more than a year. It lived to grow up, and, at the time the father was under my care, was over thirty years of age. He, the son, had late syphilitic ulceration of the fauces, which I cured with potassium iodide. The next child born to Liwai had the same trouble as the first, but, as the parents at that time were very poor, they did not seek medical assistance and the child died when about six months old. The third child seemed healthy until he was about fourteen years of age, when he became a leper and, in 1882, was as bad a case as I ever saw. The fourth child born to this couple seemed healthy until he was six years of age, when he also became a leper and died with the disease before the third child developed it. The fourth child was given to friends and never had any communication with the third and only saw him a few times and never after the fourth became a leper. The parents went to the leper settlement of Kalawao to live with the third child, and remained there, living with him in a little one-roomed cabin until the father came to Honolulu for treatment for his necrosed inferior maxilla, and after his recovery returned to the settlement. The mother, during her husband's absence, picked up a lover of about the same age as her eldest son and left her leprous son to care for himself until his father returned to him. Neither of the parents showed a trace of leprosy although they had lived with their leprous son for more than five years after he became a leper. Here let me quote again from the article on "Constitutional Syphilis," by Hutchinson, p. 444, "Inherited Disease:"

"*Primary Stage.*—The infants usually remain without symptoms for from one week to three months.

"*Secondary Stage.*—Constitutional or exanthematic. From the age of two to four weeks to the end of the first year. This stage is essentially transitory, and will disappear without treatment, if the child lives.

"*Intermediate Stage.*—Stage of latency. This stage extends from the end of the first year of eighteen months to the second dentition, the time of puberty or even very much later.

"*Tertiary Stage*, or stage of sequelæ. This stage may commence with the second dentition, at the time of puberty or not till much later. Its duration is quite indefinite."

The applicability of the preceding quotation to the series of cases just given is too obvious to require comment.

Now let us consider our subject in still another light—and here I must use, as it will be readily seen I have already, some of the facts I have employed on a previous occasion. The etiology of this disease is so intimately intermingled with the question of contagion that I must rely, to a certain extent, on the same facts to prove my position in either instance, I may therefore be pardoned for calling attention twice to the same series of cases as well as quotations.

On November 14, 1883, I inoculated six lepers with the virus of syphilis, by taking six ivory vaccine points, and scraping off the surface of a mucous patch on the inner side of the lower lip of a native woman. The points were then allowed to dry, and, three hours afterward, I transferred the virus to the arms of six leper girls under twelve years of age. December 14th, following, I repeated the experiment, taking the virus from a hard chancre on the penis of a Portuguese who came to my office. I saw this man in March, 1884, three months later, in the office of a brother physician, and found he was suffering severely from secondary syphilis. The last time I used fourteen points and inoculated fourteen lepers therefrom, but no result followed in any of the twenty experiments. For the suggestion of this experiment I am indebted to my friend, Dr. E. Pontoppidan, of Copenhagen, Denmark. I am not aware that anyone else has ever attempted to inoculate a leper with syphilitic virus. Since coming to San Francisco I have tried, on several occasions, to get the opportunity, but so far without success. If it be eventually established that a leper cannot be inoculated with syphilitic virus, I imagine that syphilographers will need no other proof to convince them of the etiology of leprosy.

Turning now to still another branch of our subject, the neurotic condition of lepers, one illustration will suffice. In 1837 a young couple from one of the New England States settled in Hawaii. The husband was a man of marked nervous erethism; of an excitable, quick nature; a slim, thin figure. He became noted for his eccentricities, and was at one time sent by his friends back to his Eastern home, in hopes that he might regain his mental equilibrium. He came back to Hawaii; became greatly interested in the study of conchology, and died on a trip to the South Seas, as the results of putrid fever contracted by keeping numbers of uncleaned shells in his cabin in the vessel he was travelling in. One of his sisters went insane from a disappointment in love and has been insane all her life. Eight children were born to this couple. The eldest had also a disappointment in love and has always been somewhat of a hypochondriac; the second is of a most irritable, excitable nature, given to outbreaks of wrath on trifling occasions; the third married when twenty-four years of age. When her third child was born she had an attack of puerperal mania, was a raving maniac for seven days; then had erotic desires which led her to strip off her clothes and mounting bareback on a horse to ride wildly across the country and to commit the wildest excesses with chance acquaintances, natives, and Chinese. By the end of a year's time she apparently regained her mental health, and husband and wife resumed their married life, she becoming the good wife and mother she had been previously. Three more children were born to them, making six in all. After the birth of the last, now fourteen years of age, the wife again became insane and has remained so, with occasional lucid intervals since. In 1884, during one of her sane periods, she, with a sister, came to San Francisco, where, coming under medical observation, she was pronounced a leper, and was at once hurried back to Hawaii. On arriving there the entire

family came under inspection. The first of the six children had died in 1879 with typhoid fever; the second, in 1884, some sixteen years of age, was a leper; the third was not a leper, but had congenital absence of the upper lobes of both ears; the fourth was a leper; the fifth was not, but at two years of age had had an attack of infantile paralysis which left the right heel drawn up to the top of the left patella; the sixth was simple minded and a leper. Shortly after arriving back at Honolulu the mother had another attack of insanity and her leprosy disappeared, and has not since manifested itself, although she has had no regular treatment therefor. The father of this family, a very intelligent German, took the second and fourth child who showed the leprosy and came to this coast, the third child, who did not at the time show it, also came here, but lived five hundred miles from his leprous relatives, but, in less than a year, he developed it, and now all three of these children are inmates of a lazaretto where all are improved wonderfully under treatment.

Turning back in our history, the next child born to the New England couple is eccentric; the next was drowned in youth; no history. Next came twins, one died, aged six months. Before his death he had a sore on one carpus which ulcerated through, so that a free passage existed. The other twin grew up, led a licentious life; had an illegitimate child by a native woman. The child, when I saw it in 1881, was a severe sufferer with inherited syphilis.

In the *Medical Bulletin* for March, 1883, J. V. Shoemaker, A.M., M.D., gives us a little of the life history of this second twin. "H. J——, aged thirty-four, was born in Honolulu and had resided there since his birth, with an occasional trip to the States; his parents were Americans, who had emigrated from New Hampshire to that island. His occupation was that of a planter, and he had succeeded in saving sufficient means to enable him to live in comparative comfort. He stated that he had led a very dissipated life until he was twenty-four years of age, especially in promiscuous intercourse, but had never had any venereal disease. Eight years ago, having felt poorly for a time, he noticed a dead spot of skin just above the knee. It spread slowly, and was only about twice as large four years after its first appearance. Six months later he married a healthy native woman, and a weak and puny child was born to them within a year, which lived but a short time."

Since H. J—— was under the observation of Dr. Shoemaker, his (H. J——'s) wife has given birth to two children, one of which took the prize in a baby show, and H. J—— has apparently completely recovered from his leprosy, and none of his family show it. His wife was of white parentage and had a child by her first husband. The last child of the New England couple is a simpleton. The family have been scrofulous for an unknown period—their ancestors, being of the old New England Puritan stock, for generations had undoubtedly reverted to a condition virgin to syphilis and then two of them, who led lives of gross licentiousness among a race where syphilis manifests its worst ravages, became lepers. These two had not lived together for several years before they became lepers.

And now as to food supply and manners of living. Almost the entire food of the Hawaiian race from time immemorial has been *poi*, which is a paste made from the tubers of the taro plant (*Arum esculentum*). This tuber grows in the water, and is cooked by steaming it among hot rocks covered with earth; then pounded to a paste and allowed to stand until it becomes sour, and this with fish, when they can get them, and sea salt and red pepper, is almost their only diet. Like all other uncivilized races, they are extremely improvident—when food abounds they gorge themselves; when it is scarce, they go hungry. Their houses, until recent years, were simply grass huts, and they lie on the ground—there being no floor—with only some grass and mats made from puhala leaves for beds. Leprosy there, as elsewhere, is largely a disease of the poor and illy provided for portion of the population. With the comforts which have come to them in recent years leprosy is much milder than formerly.

Turn again, for a moment, to the point of the system reverting to a condition virgin to disease.

A few months ago I saw, in consultation with a reputable practitioner of Alameda County, W——, fifty-two years of age, a native of West Virginia, out of which State he had never been until some fourteen years ago, when he came to California. His parents were also natives of Virginia. W—— had never been out of the United States in his life; denied having ever associated with Chinese in any manner. Said that about thirty years ago he had a long continued attack of "sore throat;" his hair fell out at the same time and he had nocturnal rheumatism; denied chancre and bubo. He had been an inmate of the County Hospital for several months some three years ago for an eruption which came out on him. I did not learn what the diagnosis was at that time, but when I saw him in March, 1886, he was a clear case of leprosy.

In February, 1886, I saw J. B——, a leper, driving a dump wagon on Eddy Street, San Francisco. He was thirty-eight years of age; had never been out of the United States, except to come on the railroad from Buffalo to Detroit across the Canadian line (which separates these two cities), and which journey only occupies a few hours. His parents were also natives of the United States, and were healthy, as were also his brothers and sisters. He gave a clear history of syphilis acquired from a squaw in Nevada. He had been under the care of Dr. Huntington at the Railroad Hospital at Sacramento some two years previous for syphilis. This fact I gathered from Dr. Huntington as well as from the patient. His is a far advanced case, and at the present time he is an inmate of our Lazaretto.

But we shall find other and stronger proof of the proposition first laid down, in taking another view of the subject.

The people of Polynesia, including Hawaii, use for intoxicating purposes the root of a plant called ava (*Peper methysticum*). They prepare this by chewing it, and ejecting the chewed root and saliva into a convenient receptacle, when the saliva is strained off and drunk. The chiefs keep one or more servants to do the chewing for them. King Kalakaua, of Hawaii, employed for this purpose, from 1863 to 1878, a period of fifteen years, two lepers, by name Paiaina and Wainee, and King Kalakaua drank the saliva of these two lepers, yet he did not develop the disease. Wainee was under my care from December, 1881, to December, 1884, and was a bad case of the tubercular form of the disease. Queen Kapiolani's first husband was a leper for ten years before his death—which took place in 1859—and she had two children by him during those ten years, but she is not a leper.

I know five white women who have had leprous white husbands; three of these women have each had three children, and the others two children by these leprous husbands, and neither wife nor children have leprosy. Two of these women had been married previously, and, although the children of the first husband in each instance have lived with their leprous step fathers, they have not contracted the disease.

A former Attorney-General of the Hawaiian kingdom, a white man, contracted leprosy there and came to San Francisco a leper, in the early sixties—nearly thirty years ago. While in that condition he became Registrar of the city, being a leper during his entire term of office, and he finally died of the disease. His wife died in the early part of 1891, an aged woman, non-leprous. She lived with him until he died. One daughter has six children, and neither she nor the children are leprous. Another daughter is here now, a highly esteemed young woman—non-leprous. A member of King Kalakaua's late ministry, a white man, has had a leprous mistress residing in his house for many years.

He is not a leper. The former steward of Kakaako Leper Hospital, in Honolulu, married a leprous woman more than eighteen years ago, and lived with her little less than a year, when they separated. Seven years afterward he picked her up on the street one evening and spent the night with her, and, as he expressed himself afterward to me, was disgusted in the morning to find his companion over night was his lawful wife. He had meantime illicit relations with another native woman, by whom he had two children. Neither woman nor children were lepers. Then his wife obligingly procured a divorce from him and he abandoned his mistress and married another leprous woman, by whom he had a child, which died at six months of age with diarrhœa. Then the wife died with leprosy. He then cohabited with another leprous woman, who had a child by him; but before the child was born he married another leprous woman. She died in a short time and he again married, this time to a young woman who is not a leper, and who has several children by him. None of the family are leprous. He is now a Government school-teacher there and Superintendent of a Sunday-school.

I might follow up this recital, but will summarize by saying I know of twenty-six cases where white persons have cohabited with leprous members of the opposite sex for years, openly and knowingly, and not a single instance has occurred of contagion. In addition to this, I have known of five cases among whites where children in the family have had leprosy and the parents have nursed the children for years without contracting it. Instance: In November, 1884, H. W——, a girl about twenty years of age, died here on Bush Street of leprosy. The mother told me she slept with her leprous daughter for six years before the daughter's death. The mother has not developed the disease.

In July, 1882, I was called, in Honolulu, to see a lad, sixteen years of age, who had been a leper for eight years. His father had led a most licentious life; was a lawyer by profession, and his practice consisted largely of divorce cases among natives. He was of missionary parentage—born in the Islands. He denied syphilis, but at forty-two years of age was a sufferer from continuous headache, which culminated in hemiplegia. His oldest child, a daughter, was over eighteen years of age; had never menstruated but three times; could not go to school because of headache, which became unbearable if she kept up any studies. She had a small, weazened face, and there was marked enlargement of the post-cervical and epitrochlear glands. The next child in the family was the leprous son. His left hand and wrist were withered away and were no larger than those of a child of five years. Grasping the arm and holding it up, the hand dropped in either direction as the arm was turned—the boy having no control of it, and from about two inches above the carpal region, hand and arm were analgesic and anæsthetic. To the left of and above the left nipple was an elliptical patch, about two inches by three, surrounded by a raw-ham colored areola about a quarter of an inch wide. Inside of this areola the skin was anæsthetic. A similar patch, but larger, was on the left thigh, and the lad had the same glandular enlargement as his sister. The next child in the family, a girl, had nothing of interest to note only a very decided enlargement of the epitrochlear gland on one side and less of the post-cervical glands. The other child, younger, seemed entirely healthy. No restriction had been placed on the leprous boy; he had used the same towels and bed-linen, and ate at the same table as the rest of the family, but he alone was a leper.

In another case a brother nursed and cared for a sick sister, taking her to Europe to see noted physicians. He spent all the earnings he had saved by years of hard labor—amounting to several thousand dollars—in trying to cure her, but she died in San Francisco a leper and a raving maniac in June, 1887. Her mind gave way under the long-continued suspense. Neither the brother nor the mother, who shared his weary life-work for the last two years, nor any other member of the family show a sign of leprosy.

In another case in San Francisco a devoted sister has been attending and watching a younger brother drag out the weary hours until death shall free him from the long agony. I know them both well. Since the above was written he has gone to Honolulu.

Now, turning to another view of this subject, I have had thirty-five white lepers under observation and only two of them have admitted sexual connection with lepers before they themselves became lepers. The rest, with these exceptions, and these doubtful, denied any, even the most casual, contact with leprosy in any form before the disease appeared in their own persons. But there is other and still stronger proof. In the *Journal of Cutaneous and Venereal Diseases*, January, 1886, will be found these words: "He refers to cases in which lepers have cohabited with their wives during a lengthened period without infecting them, and in which the said wives have even given birth to perfectly healthy children. He cites the experience of a certain physician, who, after several unsuccessful attempts to inoculate himself with tuberculous leprosy, met with the same failure in his experiment upon twenty healthy individuals." These experiments were made in Norway. In a former paper on this subject [1] I gave an account of ten inoculations which had all apparently failed of results, but three years later, or four years in all after the inoculation, one of the subjects, Keanu, a native of Hawaii became a leper. Inquiry into the family history in this case, however, destroys its being received as evidence for or against the doctrine of contagion. Dr. S. B. Swift, Resident Physician at Kalawao Leper Settlement, has recently shown [2] that Keanu belongs to a family of lepers. His first cousin, his own son, and his sister's son were all lepers before Keanu. Commenting on this case, Dr. Swift says: "But supposing that the inoculation did propagate the disease in Keanu, then I would say that its ravages in this case, in the short space of five years, are such as to make it unparalleled in the history of this settlement, and contrary to what little experience I may have acquired during a continuous residence among a thousand lepers for nearly two years." I believe Keanu had the disease in his system before he was inoculated. The Hawaiian race is so thoroughly saturated with it as to make any experiments on them in this direction utterly unreliable.

In the chronicles of the London Missionary Society, March, 1884, is the following by Rev. James Kennedy, M.A.: "Lepers are found in all parts of India, not in such numbers as to be an appreciable portion of the population, but in such numbers as to be well known. They are regarded by the Hindoos as objects of divine displeasure, not on account of wickedness in the present life, but on account of wickedness committed by them in a former birth. While thus regarded they are not excluded from society, as was the case with the Jews, and is still the rule in some parts of the world. They are allowed to move about, and to ask alms of those they meet. At Benares, I have sometimes seen them sitting on a native bedstead with persons who, if they did not touch them, showed at least no dread of their immediate neighborhood. While Kumaun was under native rule lepers were buried alive, their nearest relatives heaping earth on them, but since the establishment of British rule, in 1815, this atrocious custom, as well as other customs equally inhuman, has been suppressed."

Rev. J. H. Bruce, of Satara, India, writes: "I cannot find that there are any government laws whatever on the subject of leprosy. There are certainly no laws of segregation, and lepers are found everywhere in their own homes and villages. There are no restrictions in regard to their marriage—there could hardly be any in this land of infant marriages. In the case of adults, the non-lep-

[1] Pacific Medical and Surgical Journal, October, 1885.
[2] Occidental Medical Times, April, 1890.

rous party would shrink from marrying a leper. When, however, one of the parties became a leper after marriage, there would not always, and perhaps not generally, be a separation of husband and wife. . . . We have had in our house for years a child nurse, who is the widow of a leper. . . . You ask how Vishompunt could preach and visit if he was a leper. The fact of his being a leper was well known, and never in any way concealed, yet he continued his pastoral work until within a week of his death."[1]

In the "Report on Leprosy by the Royal College of Physicians," 1862: "The Committee having carefully considered the replies already received, are of the opinion that the weight and value of the evidence they furnish is very greatly in favor of the non-contagiousness of leprosy. The Committee can only repeat the statement made in their former report to the College, that the replies already received contained no evidence which, in their opinion, justified any measure for the compulsory segregation of lepers."

Acting on this advice, the Duke of Newcastle forthwith issued a circular to the Governors of the Colonies expressing the opinion "that any laws affecting the personal liberty of lepers ought to be repealed, and any action of the executive government in enforcement of them, which is merely authorized and not enjoined by the law, ought to cease."—Aitken: "Hand book of Treatment."

Now notice. In India, under native rule, up to 1815, lepers were buried alive, but still the disease persisted; while under British rule, with no compulsory segregation, we find, at the most, only 1 in 1,500 persons a leper.

W. H. Geddings, M.D.,[2] of Aiken, S. C., says: "Isolated cases of leprosy have been observed in Charleston and its vicinity for many years, the present being the latest of a series of twenty that have been brought to my notice during the last twenty-five years. In none of these cases was the disease hereditary, although in one instance a mother and daughter were affected at the same time. In all of these cases, except the one just mentioned, there was not the slightest evidence of contagion, nor has it ever been deemed necessary to isolate those affected with the disease. When well enough they walked about the streets of the city, attracting but little attention, as the people knew from experience that in this country they run no risk of contracting the disease by coming in contact with those affected with it.

"As isolated cases of leprosy have been observed on the coast of South Carolina for nearly fifty years, without any apparent increase in the number of cases, it may be safely inferred that there is but little danger that the disease will ever become endemic in this section.

"The recent enactment of the national quarantine law forbidding the admission of lepers into this country, and the discussion of the subject of leprosy at the conference of State boards of Health, at Nashville, brings this disease to mind. There is no evidence that leprosy is increasing in this State, and yet there is no law that would allow the isolation of the leper. In the century that the disease has existed in Louisiana no case of contagion is known, and to-day persons so afflicted are living with their families and not subjected to the additional affliction of separation from their friends. These people are liable to travel; and but a short time ago a case of leprosy was discovered in Jackson County, Mississippi, and isolated. He was originally a native of Louisiana. The mortality tables show one or two deaths a year from the disease, a fact that does not indicate an increase in the number of cases. Lepers throughout the State are induced to come to the Charity Hospital for treatment, and many remain there until death."—Correspondence Medical News, June 21, 1890.

"That leprosy in Japan is not in the slightest degree contagious or infectious; that the idea to isolate lepers from other patients does not occur to anybody. In my own wards I have always had lepers between other patients, everybody knowing the nature of the disease, but no one objects to the sleeping in the bed next to theirs. No disinfection is ever used. There is a native doctor in Tokio, in whose family the treatment of leprosy has been carried on as a specialty for at least three generations, he and his whole family live in the same house with his leper patients. For a hundred years, many, many thousands have been treated in that same house in the centre of a capital inhabited by more than a million of people and never one case of contagion has happened."—Letter of Dr. Baelz, Professor of Chemical Medicine at the University of Tokio, to the late Rev. S. C. Damon, of Honolulu.

There are nine Sisters of Charity on Sheldrake Island, in the mouth of the St. Lawrence River, in a lazaretto, living in the same house with a number of lepers, washing the leprous ulcers and caring for them as long as life lasts with the poor creatures. The sisters have been engaged in this task for twenty-one years, and not one has contracted the disease. There are six of these same devoted women engaged in the same duty at Molokai. They have been on duty there and at Kakaako Hospital, Honolulu, since January, 1884, when they went there at the request of the Hawaiian Board of Health, made on my motion and request.

The case of Rev. Father J. Damien is often cited as an instance of contagion. In the latter part of 1882, I told the father, with whom I was intimate, that he had syphilis, and urged him to submit to treatment for the same, but he refused. I first noticed the scars of stellate cracks at the corners of his mouth, then on examination I found he had leucoplakia buccalis. He told me, on inquiry, of his having been for several years a great sufferer with nocturnal pain in his bones; his hair fell out, and he told me of some eruption, of what nature I could not make out from his description, he could only tell me it was a scabby rash, which came out on various parts of his person. There was marked enlargement of both epitrochlear and post-cervical glands. This was two years before the first symptom of leprosy appeared, which began with an anæsthetic patch over one malleolus. When I told him he had syphilis, he asked how that could be, saying he had never had carnal knowledge of a woman in his life.

"In a report given a few days ago by the head physician of Norway, for the cure of leprosy, it is shown that by the end of 1856 there were known in Norway 2,863 cases of leprosy, of whom but 235 were treated in hospitals, and 2,628 in their houses. Since then there had been steadily more isolation, and thereby a steady diminishing of new cases, so that by the end of 1866 there were 2,704 cases, and of these 795 were in hospitals, and 1,909 in their houses; a decrease of 159 cases. By the end of 1876 there were 2,008 cases, showing a decrease of 696 cases. Since, the decrease has been regular; thus there were known, in 1877, 1,923 cases; in 1878, 1,853 cases; in 1880, 1,582 cases, of whom 617 were in hospitals, and 965 in their houses. Thus the decrease of this disease is from 2,863 cases in 1856 to 1,582 in 1880; in all 1,281, or forty-five per cent."—*Hawaiian Gazette*, March 10, 1883.

Summing up this statement it will be seen that, beginning with 1856, we find one case in twelve (or a little over) segregated, and 2,628 different sources of contagion—according to those who believe in contagion—engaged in spreading the disease, and yet the disease began to decrease, so that with a gradually increasing number of cases segregated (or rather varying number, for in 1866 795 were segregated, and in 1880 only 617), in 1880, forty-five

[1] Letter to C. M. Hyde, D.D.: "I find from the censuses of the following provinces of 1871 and 1872, comprising nearly the whole of India, viz., Bengal, Madras, Bombay, the Central Provinces, the Northwest Provinces, Oude, Coorg, and Mysore, that the total number of lepers then enumerated was 99,639—or 1 in 8,864 of the population; but as I have already stated about 1 in 1,500, or 120,000, would be, I believe, nearer the truth."—Leprosy, by W. Munro, M.D., C.M., p. 42, Manchester, 1879.

[2] MEDICAL RECORD, August 19, 1884

per cent. of the disease disappears, but still about three-fifths of the cases are at large. It has been asserted, however, that those who were living in their houses were carefully segregated. Drs. Danielssen and Boeck say: "In Norway most of the cases of leprosy occur among the very poorest classes of the inhabitants, and especially among those living around the shores of the deep bays or fiords on the west coast. The huts of the people generally are of one low narrow room, in which all the family live, with a small window that is not made to open; are usually planted down in a damp site, and surrounded by filth."—College of Physicians' Report, p. lxvii.

Drs. Danielssen and Boeck say that "among the hundreds of lepers whom we have seen daily not a single instance has occurred of the disease spreading by contagion. We know many married persons, one of whom is leprous, cohabiting for years without the other becoming affected. At St. George's Hospital many of the attendants of the inmates have lived there for more than thirty years, and are quite free from any trace of the disease. . . . As the result of our observations, we have only to deny the contagiousness of leprosy."—College of Physicians' Report, pp. 4, xix.

While residing in Honolulu, a Norwegian lady of standing in the community told me that she had frequently, in previous years, visited the leper hospital at Bergen, Norway, and had seen the leprous inmates engaged in making socks, gloves, mittens, and embroidery, which articles were freely used by the community at large.

Now let us bear in mind that so-called segregation began in Norway in 1856, with a little less than one leper in a dozen segregated, and with at no time one-half the cases so disposed of, the disease decreases forty-five per cent. in twenty-five years. Like results follow like causes is an old adage.

Segregation began in 1866 in Hawaii, and since that time has been followed out with a really brutal severity. At no time since the inauguration of the system has the proportion of cases segregated fallen as low as one-half, as far as I could find out, and I had the fullest opportunity to know of any one. The white population there are terribly in earnest, and, as they control the policy of the country, they have exercised every ingenuity in this matter, so that it may be considered certain that an average of two-thirds, at least, have been for the entire period under a restraint much more pronounced than is the case in Norway. Yet there is not the slightest evidence that the disease has decreased, at least I know of no such evidence. From all I hear from there, the proportion of lepers continues as great, if not greater, than it has for years. That the disease does not manifest as severe symptoms as formerly is certain, but I know of no reason to believe the percentage of those afflicted has lessened at all. On the contrary, both the total number and the proportionate number of cases would seem to have steadily increased. Up to April 1, 1884, the total number of lepers consigned to Kalawao Leper Settlement from its institution in 1866 was 2,864. The Report of the President of the Board of Health to the Legislature at its session in the early part of last year shows that: "On March 31, 1888, it was estimated that there were then at large throughout the kingdom 644 lepers. It was only claimed that this estimate was an approximate one. It is found in practice that it is impossible at any time to make an absolutely accurate estimate of those who are not already segregated. During the biennial period ending March 31, 1890, there have been carefully examined by the Examining Board 1,087 persons; of these 726 were pronounced to be lepers, 207 were entered under the head of 'suspects,' and 154 were discharged as unaffected. This number of lepers closely approaches the number supposed to be at large at date of last report. That the number was underestimated is quite evident from the fact that, according to the best information obtainable, there were at date of this report about 100 persons supposed to be affected by the disease still at large, who have not been before the Examining Board."

From the report of Mr. R. W. Myer, Agent of the Board of Health, at the same time, there comes the information that there was at Kalawao then 1,159 lepers segregated. In 1866, when segregation was first made compulsory, the natives submitted willingly, no one thought of hanging back even, as is a well known fact, so we may be certain that pretty nearly all known cases went to the settlement. Of late years so bitter a feeling has grown up among them in opposition to segregation, that in quite a number of instances the lepers and their friends have risen in arms to resist the officers sent to apprehend them.

Bring these three facts together. In India, up to 1815, lepers are buried alive to get rid of them; and still the disease persists. In Norway, the disease is disappearing without segregation, for putting two cases out of five into hospitals, where they are allowed to carry on their handicrafts, and sell the products to those outside cannot be called segregation. In Hawaii, where as thorough segregation as the government, aided by public opinion, can enforce is carried out, the disease steadily increases. And it is to be remembered, in Hawaii, a little country, where everyone knows his neighbor, and anyone with a spot or blemish is looked at with suspicion, it is much harder to conceal a case of leprosy than it is in larger communities, where a person can live much more to himself. The conclusion, to my mind, is irresistible that segregation cuts no figure, one way or the other, in preventing the spread of leprosy.

Let us take another view of our subject. Jarvis[1] says: "Before Captain Cook's visit diseases were few and simple, subsequently they increased in number and violence, while the remedies and knowledge necessary for arresting them remained unknown. . . . The habits of the natives in both respects, are now better than they were before their discovery, when drunkenness, produced by the use of *awa*, and promiscuous intercourse and incest were almost part of their natures. The former, no doubt, destroyed many, and created a disposition to disease in more, but the natives were never so completely addicted to it as to make it a primary cause in their destruction. The diseases incident to the latter have extensively run throughout the whole race, doing irreparable injury in poisoning the very fountains of life, and engendering upon offspring effete constitutions. In 1842 the virus had almost run out, but since, owing to the great influx of shipping from all parts of the globe, it has again developed itself in new and horrible forms with a virulence and fatality unequalled since the days of Cook."

To understand this matter we must go somewhat into the question of sociology.

Before the advent of the whites in Hawaii, marriage, as we understand the word, one male and one female consecrating themselves to each other only, was practically unknown. About the first lesson the Hawaiian mother taught her infant after it could walk was the *hula*, or national dance, which is neither more nor less than the motion of the sexual act. She began by placing one hand on the abdomen, and one on the back, and then instructing her charge to make three motions to the right and forward; then the same left and forward; then three directly forward, the body above the umbilicus being held as near rigid and immovable as possible. The more lascivious the action, the more accomplished the performer. I asked several of the old natives why they taught their children such things. They replied that in the case of girls, if they fell in the way of some chief or rich man, and succeeded in pleasing him, their fortunes were made. They fully believe that a girl cannot have her menstrual flux the first time without, as they express it, "she is opened up," so it is the common custom of the land, when the girl arrives at about the period of puberty, for her to take her first practical lesson of the

[1] Jarvis's History.

hula. Father Damien told me he knew a kahuna (sorcerer) at Kohala, Hawaii, who had a great reputation in such cases, and he, Father Damien, had often seen parents taking their young daughters to this kahuna for this purpose. It is not at all infrequent, however, for the father or the brother to perform the operation for the young lady's benefit.

Somewhat later in life, in former times, a kahuna took a class of girls, and, after making an offering to Laka, the Hawaiian Venus, took one of the class and went through the performance with her, while the rest looked on and made mental notes of how to do the act in the most artistic and satisfactory way.

Friends in visiting each other exchanged wives over night, and strangers were accommodated with women as a matter of common courtesy.

I once asked Queen Kapiolani what proportion of native women, in her opinion, had never had carnal knowledge of any other man than their lawful husbands. She replied, "Aole akahi wahine likapu ke la" (not one woman like that). There is no word meaning chastity in the language.

Now, as we have seen, when syphilis was first introduced by Captain Cook in Hawaii, "one-half the population died, leaving the dead unburied for want of those able to perform the rites of sepulture." But this does not tell us the result in individual instances. Let us see what happens in such cases. While we cannot see it as it was at first, still enough yet exists to give us some insight into the case.

Charles C——, a half-caste, came to the Government Dispensary, in Honolulu, in 1882, with his foot and the leg half-way to the knee gone. A raw conical stump remained, some four or five inches long, presenting a granulating surface, bleeding easily, and which had continued in the same condition for many months. He was a man of about thirty-three years of age, a carriage-driver, in fair circumstances. I could get very little history of the case, simply that gangrene had come on without appreciable cause or reason, and had left the parts in the condition they then were. As he gave a syphilitic history, I applied mercurial ointment to the stump, and gave him iodide of potassium internally; as a result the stump healed as if by magic. Some months afterward he came again with some masses projecting from the anus, which I diagnosed as hæmorrhoids and ligated; but when the ligatures came away I found raw ulcerating surfaces remaining, which would not heal until I put him on antisyphilitic treatment. Again some months passed, when he came with a slight cough and complaining of great pain over both sides of the thorax. The lungs were consolidated in patches; hectic fever set in, and in a few weeks he died. The last time his friends persuaded him that he had a "native sickness," and only a kahuna could cure him, and so he would not submit to treatment. According to native ideas, some diseases are foreign and require a doctor, some are native and require a kahuna, or sorcerer.

Kealoha, a native woman, about twenty-five years of age, came to the dispensary with the thumb and all the fingers of the right hand gone. From just above the wrist-joint, and involving the entire stump that was left, was a raw sore, and that stump was bent around to a right angle with the fore-arm. I could get no history of the case, but, taught by experience, I dressed the stump with mercurial ointment and gave her iodide of potassium internally, with the result of sudden improvement and a complete cure in a few weeks. If such cases occur in this country, I have never seen them. I saw, in several cases, deep cracks form opposite the elbow, shoulder, and wrist joints, and there was every prospect that similar results would follow, but the patients died before the process was completed.

The native pastor of one of the churches in Honolulu told me that he, his father, and six brothers all led very licentious lives. His father and brothers all died, as he affirmed to me, with syphilis. The pastor himself was converted, but not soon enough. His shin-bones became badly marked with syphilis. His wife was also a great sufferer with it. His eldest daughter, at about thirteen years of age, broke out with large rupial scabs on her face, and became so anæmic that she looked like a corpse. Iodine, mercury, and arsenic, pushed to extremity, brought her around for a time, but just as soon as the remedies were stopped she would get a relapse. Finally, the disease got the mastery, and she became a leper. The time came when the remedies seemed to lose effect, and no amount her system would bear stopped the progress of the disease. I have seen many, many similar cases, and I cannot help believing that leprosy is a result of syphilis.

Previous to the advent of the whites in Hawaii the natives went naked, and their labor consisted in cultivating enough land to insure them poi, or sweet potatoes (and that, in very productive soil, was not severe), in fishing in waters teeming with fish, and in an occasional intertribal war. Their weapons consisted of wooden spears and clubs, they having no knowledge even of the bow and arrow for war purposes, so that their fighting merely served to keep down redundant population. With the advent of the white races, however, a new order of things began. An immense demand for sandal-wood—with which the islands abounded—for export to China commenced, and the chiefs forced the people to cut and carry this wood in great quantities to ships in waiting, they receiving in exchange all the, to them new and varied, products of civilization. As the islands had no beasts of burden, man himself had to transport on his back the wood cut in the mountains, and thus brought it to the sea. Not only this, but the advent of the missionaries added immensely to their burdens. Shortly after the preaching of the gospel began, the Queen regnant and many of the leading chiefs became converts to the new faith, and churches and school-houses had to be built. Many of these buildings still remain—large stone structures, going to decay—while the people for whose use they were intended, and whose labor built them, are all dead, and there is no one left to use them. Money for the use of teachers and preachers had to be raised, and thus their burdens became heavier on every hand. Added to all this, new ideas came in to exclude the beliefs of centuries. The Hawaiian has always looked to his chief to do his thinking to a large extent for him. The early missionaries almost at once succeeded in making converts of the rulers of the land, and, through them, became the real governing power of the nation.

New England Puritanism, rigid and severe, was, as far as could be, substituted in the place of heathenism and gross, almost boundless, sensualism and licentiousness. It was sought to change the habits, manners, and customs of centuries in a single generation, in fact at once, from savagery—with all its license for the exercise of human passions—to the rightful and steady religious and moral life which the Christian faith demands of its true believers and followers.

Converts to the new religion became so numerous that on one occasion it is related that a missionary seated the multitudes on the grass and went among them with whisk broom in one hand and a basin of water in the other, and, sprinkling the fluid over the crowd with the broom, baptized three thousand of them in a single day. Laws against licentiousness were passed, and executed, as far as possible, with the greatest severity. Education, too, was enforced, and the unlettered savage was sedulously taught to read and write, and encouraged to study the Scriptures and fit himself for a life beyond this world. In fact, what the poor native had all his life been taught to believe by his heathen priests was to be thrown overboard, and what his new teachers taught him at once substituted instead. What was right one day was wrong the next. What must be done to insure safety and happiness one day was wrong the next day, and was certain to damn a man if persevered in. New wants, also, made

themselves known. The women wanted bright-colored calicoes to array themselves in, and mirrors to admire their counterfeit presentment in afterward. The men wanted guns and ammunition to fight with; and both sexes a multitude of things too numerous to mention, which civilization was bringing them. Under all this stimulus, so suddenly coming on, there could only be one result—their nervous systems gave way and the neurotic condition, which I have before insisted on as a precedent of leprosy, was induced generally among them, so that, while in other lands and under different conditions syphilis rarely develops into the form commonly known as leprosy, it here became a widespreading epidemic affecting, it has been computed, from four to five per cent. of the population.

And now let us sum up our study.

1st. We have the clearest and most unmistakable proof that leprosy is a non-communicable disease, as leprosy, under any circumstance. Cohabitation for many years, inoculation, and drinking the saliva of lepers, have failed in any and every instance to communicate it, and segregation plays no part in preventing the spread of, and non-segregation in spreading, the disease.

2d. Leprosy invariably follows the introduction of syphilis among virgin races so quickly as to point most strongly to a common origin. We find this exemplified in the case mentioned by Mr. Sturges, where, in the short space of fifteen years, a large number of the inhabitants of an isolated community became lepers, and where there is no evidence that they ever were in communication with a leper—for it is not a supposable case that crews of merchantmen would have cases of leprosy among them, it being a disease which, in a short time, would surely incapacitate a man for the active duties of a sailor's life, even if the disease were communicable, which I cannot believe it to be.

3d. It is a well-known fact that syphilis, in an immense majority of cases, cannot be acquired under any circumstance a second time. While the twenty cases in which I inoculated syphilis on lepers are not absolutely conclusive, still it is a point worth consideration. The Hawaiian race are so much under the influence of syphilis that no absolutely reliable data can be drawn from experiments in this line with them. It is to be hoped that this experiment should be tried by competent observers under more favorable circumstances. We all know that syphilis is eminently contagious in its primary condition—absolutely non contagious in its late manifestations. This being the case, would it not follow as a law that the nearer the initial lesion—the chancre—the more active the virus?

4th. By accepting the view I have put forth, we have an easy, natural solution of leprosy—a non-communicable disease after it declares itself as leprosy—spreading as it does spread, and still being in itself non-contagious and non-communicable. In this way, also, we are able to account for those isolated cases of leprosy which now and again appear in communities otherwise free from the disease, and in which the subjects affected with it can never by any possibility have come in contact with it.

In closing this paper, I wish to put one more observation on record, to be worked out, perhaps, in the future. Without going into particulars and statistics to prove the assertion, it would appear to be the case in Hawaii that members of the German race are far more subject to leprosy than those of the British or American. As far as I could compute, their tendency to acquire the disease is four times as great. This estimate, and it is only an estimate, being reckoned on the number of cases in proportion to the total number of each of the above races who are inhabitants of the kingdom. Can it be because the British and American are of mixed race and parentage and the German of unmixed only? If we look over the world we shall find leprosy most prevalent, and continuing its ravages longest, in countries whose inhabitants are of unmixed parentage, China, Japan, India, Norway, and Hawaii are instances.

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OBSERVATIONS ON THE HYPODERMIC USE OF GOLD AND MANGANESE IN TUBERCULOSIS—REPORT OF CASES OF RECOVERY.[1]

By JOHN BLAKE WHITE, M.D.,
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Attention to the therapeutic value of chloride of gold and sodium, combined with iodide of manganese, when administered hypodermically, was directed by me in two theses upon this subject, published in the Medical Record, December 27, 1890, and March 21, 1891, respectively.

Investigations had been made and observations of the results carefully noted for some time before my impressions of the value of this treatment were published. It was found, when these salts were administered internally, that a lesser appreciable effect was produced than when given hypodermically, and the reason for this difference may be found in the remark made by Bartholow, that the salts of gold are singularly apt to undergo decomposition in the alimentary canal. But there is another reason, quite as important to note, for the difference in effect of the gold remedies when introduced into the system by the stomach and hypodermically. The glandular system is especially prone to tubercular degeneration, and the absorbent system is therefore slow to take up and assimilate any remedy taken into the stomach; but when introduced under the skin, however, it enters the blood immediately in a pure chemical state, and is rapidly diffused throughout the body.

The first evidences of tubercular invasion presented to us are an altered condition of the blood, with symptoms referable to disturbance of the organs of digestion, and are manifested by absorption of adipose tissue and progressive muscular atrophy. A low degree of vitality supervenes, and respiratory vigor is so diminished that accumulation of mucus in the air-cells and bronchi is permitted, producing in time inflammation, which, with its accompanying conditions, establishes a nidus for the generation of inimical bacilli.

Let us bear in mind that the conditions giving rise to phthisis are numerous and diverse. The action of these conditions, when traced in the individual, may be divided into twofold causes, described as general and local. In the first, the individual constitution and the functions of nutrition and assimilation become primarily involved, as already stated. Among the latter, or local causes, we find the primary seat of the disease to be in the organs of respiration. Certain changes in the epithelium and pulmonary parenchyma lead to retrograde products, through which the lymphatic and vascular systems, and finally the constitution generally, become infected.

Among the most important general causes affecting the whole system may be mentioned family predisposition, syphilis, fevers, intemperance, insufficient food, deficient ventilation, influences of climate, damp soil, etc. Of the local causes, inflammatory affections of the lung and pleura, certain occupations, and chest injuries are the most prominent. *Thus it will be seen that the tubercular process takes its inevitable rise in physical debility and blood deterioration.*

The relation which pleurisy bears to tubercle has been pretty generally recognized. Anstie, in a pointed paragraph, asserts "that of the sequelæ of pleurisy, one outweighs all others in interest, viz., tuberculosis." It is now well established that not only pleurisy often occurs in phthisical lung disease, but also that pleurisy itself is capable of originating tubercle even in previously healthy persons. No one has more forcibly presented this fact than Dr. J. R. Leaming, whose researches and writings on this subject warrant profound commendation.

Westbrook, of Brooklyn, among others, has also laid great stress on the pleuritic origin of tuberculosis.

The greater or less amount of adhesions of the op-

[1] Read before the New York County Medical Association, June 20, 1892.

posed pleural surfaces which follow inflammatory affections of this membrane are exceedingly prone to become permanent, acting as a constant menace to the lung, exciting irritable cough, resulting in a material lessening of lung capacity, and ultimately in the destroying of lung integrity. I do not believe that a pronounced pleuritis will subside without leaving obscure lesions, which months, and in some instances years, of skilful and persistent treatment can alone remove. An alterative course of treatment, with frictions of the chest and regular lung exercise, will go far toward removing lesions which, if neglected, would result in much subsequent impairment.

The deposition of tubercle is essentially a process arising from blood impoverishment following faulty nutrition. Cases of tuberculosis for years have been successfully treated by judicious hygienic and medicinal measures. The observations of Dr. Bennett, of Edinburgh, confirmed by many others, tend to prove that treatment simply aimed to correct mal-assimilation of food not infrequently arrests the tubercular process and causes the complete disappearance of all general symptoms, as well as physical signs of tubercular degeneration ; hence it should manifestly be our aim to stimulate the flagging nutritive functions, and thus promote assimilation of food rich in elements which are deficient in the circulating current.

Holland, in adverting to this disease, uses this language : " That it must be fairly admitted that the progress of medical science has effected nothing toward a valid cure, though it is less an opprobrium upon medicine than at first thought it might appear. The more distinct knowledge that has been acquired of the tubercular diathesis, of the tendency manifested by certain habits and in particular textures to the deposits of the peculiar morbid matter, and of the more especial direction to the lungs, which elicited Louis's assertion that after fifteen years of age tubercles were never found in any part without being also present in the lungs, all directly point to a specific constitutional disease for which none other than a specific antidote is likely to be of complete or certain avail."

If we have, as my experience leads me strongly to believe, antidotal remedies in the preparations of gold and manganese, we are approaching that much-desired stage in the therapeusis of tuberculosis when we can look with greater certainty to masterful aid from medicine in combating this dread destroyer of human life.

In the incipient stage of pulmonary tuberculosis I have frequently seen the injections of the gold and manganese promptly reduce fever, diminish the cough and expectoration, check colliquative sweats, improve the appetite, restore physical vigor, and increase the body weight. In the majority of cases all these effects follow in rapid succession, *pari passu*, with each injection. Had I not frequently seen the results described follow this treatment, I would feel much more hesitancy than I do in proclaiming the value of this method.

Corroboration of the statements I have just made are constantly reaching me from medical men in various parts of the country, who have paid me the honor to test it. To Dr. O. H. Merril, of Corinna, Me., I am indebted for favoring me with the result of a large experience during the past year, and especially for his frank and generous expression of confidence in the treatment advised by me.

Dr. Merril[1] writes : "Sufficient experience has now been had to enable me to form at least a provisional opinion as to the value of your method of treating tuberculosis. Ten cases have been treated for a period of time long enough to show what the remedy can do. Other cases have received only a few injections, and will not be mentioned here. All the cases were at the same time given such other treatment as seemed appropriate. Special diet, proper hygiene, and creosote were ordered in all cases. In addition, four of the patients had cod-liver oil. In attempting to form a correct opinion of the value of the injections, I rely chiefly on the improvement obtained under the combined treatment, as compared with the results observed in previous years with an entirely similar series of cases. In the case of a woman, thirty-two years of age, with extensive disease of one lung, of eighteen months' standing, the injections were suspended for a fortnight ; at the end of that time her condition was much worse, and she begged to have them used again. She now rapidly improved once more ; and I am almost, but not quite, certain that they had the good effect which she attributed to them. One case was apparently cured, but as active treatment of other sorts was used, the part played by the injections in bringing about the result cannot be definitely stated. One case has received fifty-eight injections, and one case only ten ; nearly all of the rest had between thirty and forty.

" All of the ten cases have greatly improved in every respect, several of them to such an extent that they declare themselves well and refuse further treatment. That they are not well is shown, in the case of nine, of them, by an evening temperature of 99½° F., a pulse of 85 to 95, a slight cough, and the occasional presence of a few bacilli in the sputum. My impression is, that notwithstanding their present good condition most of them will probably relapse, for the reason that they have not sufficient intelligence to persist in systematic treatment, and for the further reason that they have not sufficient money to obtain the benefit of suitable climatic influences.

" I must say, however, that I have never before seen such rapid and uniform improvement in my cases, and, although I am extremely sceptical in regard to therapeutics, I am forced to admit that, after all the deductions which strict logic requires have been made, the injections have probably considerable power to ameliorate the condition of phthisical patients. In fact, I have in some cases been surprised at the results. It seems to me that we have here no specific, but a remedy capable of doing good service when used carefully in connection with other treatment, thus constituting a distinct advance in the therapeutics of tuberculosis. I am anxious to see reports from other observers, and especially to see anything which you may hereafter publish.

" The comparison which I have made is very favorable to the new treatment. An improvement that required six or eight months to bring about in former years, has been obtained this year in as many weeks ; symptoms that were formerly very obstinate, have this year yielded quickly. One of the most gratifying effects of the remedy was seen in the increased appetite that sometimes manifested itself within a week, nearly always in two weeks."

I ask your particular attention to the remarkable degree of abeyance in the progress of the disease noted by Dr. Merril in the presence of this potent combination.

I desire here also to record the favorable testimony of Dr. Sylvester, of Portland, Me., who has exploited the treatment with like success. To Dr. Tyndale, also, am I indebted for alluding to this treatment in a most interesting paper read before this Association last meeting.

Dr. James R. Leaming, in adverting to this method of treating tuberculosis, writes, " That the direct treatment in hospitals, instead of giving the patients quinine and cod-liver oil and sending them away to health-resorts to die, is a movement in the right direction. I am glad that you have demonstrated that the injections of the salts of gold in combination act well. I have been satisfied, you know, that the natural method of expanding the lungs, and the use of medicines to promote the absorption of plastic exudates, is a certain method of treatment. But we need all the helps we can get, and I welcome your method as one superior to Koch's and

[1] Medical News, January 30, 1892. Also personal communication received September 24, 1891.

next to the natural one, and I thank you for demonstrating it to the profession."

The salts of gold not only dissipate plastic exudation, but they exert a profound effect upon the functions of organic life, arousing the organs to healthy action and necessarily improving the nutrition.

The precise mode of action of the preparations of gold is not fully determined, but there is good reason to believe that they exert a remarkable influence upon the general nutrition. They appear to manifest their peculiar virtue first upon the circulation, secondly upon the organs of respiration.

It is a recognized fact that certain medicines do expend their special effects on particular organs, as ipecac upon the stomach, strychnia upon the spine, and digitalis upon the heart; but why or how they do so remains, even to us, who employ them so extensively, unsolved enigmas. The classic experiments of Orfila with the chloride of gold upon dogs show that in large doses death resulted from vomiting and suffocation, preceded by paroxysmal cough. T. Lauder Brunton also found that while small doses encouraged the appetite, large doses produced irritation of the gastro-intestinal track with a pseudo-catarrhal condition of the respiratory passages, resulting in death by asphyxia.

Aronowitsch, conducting his experiments on cold-blooded animals, noted that chloride of gold and sodium caused central paralysis, the respiratory function being affected before the heart or brain.

In warm-blooded animals long-continued small doses caused them to maintain a good physical condition and gain in weight; when the dose was increased the pulse became accelerated, the respiration excited, and animal heat was decreased.

All authorities concur, however, in stating that when administered in strictly therapeutic doses the gold preparations exhibit rare eutrophic virtues. Some individuals manifest an idiosyncrasy against tolerance of the salts of gold, in whom most powerful effects follow the minimum doses. I have seen the temperature increased by an ordinary dose to 103° F. and 104° F., and in some instances fall below the normal grade, with chill, which should only enhance a caution in their administration.

As an anti-anæmic, manganese is pre-eminently indicated in tuberculosis. It is an element ever present in the blood as well as in the other fluids and solids of the human body, and is certainly better tolerated than iron in those subject to tuberculosis.

Authorities are not wanting in praise of this salt, especially for its anti-anæmic effects in the cachexia of tubercular subjects. Combined with the chloride of gold and sodium, manganese is especially advantageous in controlling the blood deterioration which so rapidly and perniciously progresses in those subject to phthisis.

The administration of these combined salts hypodermically seems to singularly secure in the organism the very action which Garrod hoped to achieve by the salts of potash, viz., "A ready metamorphosis of the less vital tissues, less vital deposits, less vital plasma, and, of course, of the deposition forming the glandular and other swellings of scrofula."

In my own experience the effects obtained have been first exhilarant, followed by an increase in animal heat and vital activity, the pulse becomes more full and active, and the respirations deeper and less labored. In aggravated cases of lung disease the temperature is invariably elevated, and a decided period of reaction is established. I have noted in some cases a constriction complained of about the chest, amounting in rare instances to absolute dyspnœa. Sooner or later thereafter follows a period of depression, more or less expressed, which, however, is not of long duration. This is generally succeeded by permanent and invigorating effects, manifested by remarkable increase in appetite and body weight, with marked amelioration of morbid symptoms.

My practice is usually to begin with two drops of a carefully prepared fluid representing about one twenty-fifth of a grain of the combined salts of gold and manganese, administered with a few minims of a one per cent. solution of carbolic acid. The injections are best made in the dorso-lumbar region, where the cellular tissue is abundant and where there is greater latitude for absorption.

The following cases will afford examples of the value of the method of treatment I have proposed, but it is not intended they shall convey a claim that the remedies used are specifics in the strict sense of the term. That the treatment effects a greater amount of good in a shorter space of time than any other method of treatment heretofore advocated, clinical results will conclusively demonstrate.

Case I.—Miss S——, aged twenty-one, native born, presented for treatment January 11, 1891. Father, brother, and sister died of pulmonary tuberculosis. A year ago she began to cough and expectorate, throat felt sore, and voice became hoarse. Felt much annoyance from irritation and tickling in the pharynx and larynx, which kept up a constant cough. Examination of the larynx revealed an œdematous condition of the vocal cords and the adjacent mucous layer about the glottis.

The percussion note was dull over the anterior portion of the right lung, and the respiration was harsh and bronchial, with some dry and moist coarse and fine râles. Body weight, 120 pounds.

January 11th, 3 P.M.—Temperature, 99° F.; dose, 1 drop.

January 15th.—Temperature, 99.4° F; dose, 1 drop. Patient felt feverish after last injection, and had slight headache. Cough increased, with bloody expectoration. Throat better, and appetite increased.

January 18th.—Temperature, 98.5° F.; dose, 1 drop. Twenty-four hours after the last injection cough was increased, with bloody expectoration. This day, cough much less; appetite increased; much less throat irritation.

January 20th, M.—No more bloody sputa. General improvement reached. Temperature, 100° F.; pulse, 84; injected 1 drop; weight, 121½ pounds.

January 23d, 6 P.M.—Cough less. Temperature, 98.5° F.; pulse, 80; injected 2 drops.

January 29th, P.M.—Cough decidedly diminished, and little expectoration. Catamenia recurred at this time, and the flow was increased. Temperature, 98.8° F.; pulse, 94; injected 2 drops.

February 1st, P.M.—Feels much stronger, and in every respect better. Temperature, 99.4° F.; pulse, 100; injected 2 drops.

February 5th, P.M.—Temperature, 98.5° F.; pulse, 84; injected 2 drops.

February 8th, P.M.—Temperature, 98.5° F.; pulse, 80; injected 2 drops.

February 15th, P.M.—Temperature, 98.5° F.; pulse, 72; injected 2 drops; weight, 122 pounds.

February 17th, P.M.—Temperature, 99.2° F.; pulse, 82; injected 2 drops.

February 22d, P.M.—Temperature, 98.5° F.; pulse, 88; injected 2 drops.

February 27th, P.M.—Temperature, 98.5° F.; pulse, 80; injected 1 drop.

March 2d, P.M.—Temperature, 98.5° F.; pulse, 78; injected 1 drop.

No other medication received. Though no bacilli were discovered in the sputum, I am quite satisfied that the case was one of undoubted tuberculosis in its early stage. The injections were administered five times in March and April, at intervals of three or four days, and finally once a week during May. At the end of that time the patient was in good condition, and entirely free from all cough and throat irritation. When seen recently was in excellent physical condition, having no cough or expectoration, and weighed 122½ pounds.

Case II.—Mr. J. F——, aged twenty-three years; single; collector. Father and brother died of pulmonary tuberculosis. Up to two years ago was perfectly well. At this time took cold and began to cough and expectorate, and, with loss of appetite, emaciated rapidly. Indications of tubercular invasion were manifest in both lungs, but the right apex was especially affected. On auscultation loud mucous râles were heard, anteriorly, in infra-clavicular region, with a few moist râles extending down to base of chest, and pleuritic friction-sound about the subaxillary and posterior aspects of right chest. Under appropriate treatment—inhalations, tonics, etc.—an improvement resulted, but more or less cough with slight expectoration continued.

February 1, 1891.—The cough becoming more aggravated, the resulting increase of expectoration and losing of appetite and flesh induced him to consult me again. He has been coughing and expectorating muco-purulent sputa for past six months. Sputum was examined by Dr. Charles Lewis Allen, and found to contain bacilli of tuberculosis, the presence of which he kindly permitted me to verify.

Physical Examination.—Right lung: Diminished expansion, dulness of percussion anteriorly and posteriorly at apex, extending down to middle lobe. Modified percussion note over lower lobe anteriorly, but dull posteriorly. Moist râles discerned anteriorly, upper portion of lung, louder mucous râles extending down to base, with increased fremitus. Posteriorly fremitus increased all over the right lung, and some moist and dry râles discerned. Left lung: Percussion sound modified slightly; broncho-respiratory murmur feeble anteriorly and posteriorly. Some loose râles heard over middle portion of chest. Has some irritation in throat, and a feeling of tightness across chest. Body weight, 135 pounds.

Injections were administered about every three days, commencing with one drop and increased to three drops, when two and three drops were alternately given up to June 13, 1891. His general condition remarkably improved, and his body weight increased to 137½ pounds. When seen March 31, 1892, his body weight was 147 pounds. He had no cough, and appeared in every respect a physically sound man.

Case III.—Miss P——, aged twenty-one, consulted me June, 1890, and gave the following history: Mother and brother died of pulmonary phthisis, and father, though living, is affected with the same disease. For the past two weeks she has been suffering from fever and a cough. Before examination some fine moist râles were heard upon the left side, extending from the base of the lung to the apex, more pronounced posteriorly. Under appropriate treatment recovery resulted.

A year subsequently the patient again consulted me, complaining of debility and cough with bloody expectoration; also spat up blood about four or six weeks previously. No appetite, and losing flesh. A specimen of the sputum, which was characteristic, was microscopically examined by Dr. Charles Lewis Allen, who reported the presence of a number of bacilli of tuberculosis, which he afforded me an opportunity to confirm.

June 23d.—A careful examination was made again of the patient's chest. Right side: Dulness on percussion in the infra-clavicular space and at the base, both anteriorly and posteriorly. Harsh respiration was discerned at the upper and anterior portion of the lung, with loud, moist crepitation also heard in the sub-scapular region, becoming finer toward the base of the lung. Left side: Apicial dulness. Loud, moist crepitation in the sub-clavicular region of the lung, with some fine râles heard toward the base. Fremitus increased. Body weight, 111 pounds. Special treatment was commenced June 23, 1891. All the temperature tests were made between three and four o'clock P.M.

June 23d.—Temperature, 100.5° F.; dose, 1 drop.
June 25th.—Temperature, 101° F.; dose, 2 drops.
June 29th.—Temperature, 101.2° F.; dose, 2 drops.
July 2d.—Temperature, 99.8° F.; dose, 2 drops.
July 7th.—Temperature, 101° F.; dose, 2 drops.
July 10th.—Temperature, 99.6° F.; dose, 2 drops.
July 13th.—Temperature, 100.4° F.; dose, 2 drops.
July 16th.—Temperature, 99° F.; dose, 2 drops.
July 20th.—Temperature, 99.6° F.; dose, 2 drops; weight, 109 pounds.
July 23d.—Temperature, 100.2° F.; dose, 2 drops.
July 29th.—Temperature, 99.6° F.; dose, 2 drops.
July 31st.—Temperature, 100.2° F.; dose, 2 drops.
August 3d.—Temperature, 100.2° F.; dose, 2 drops.
August 7th.—Temperature, 100.2° F.; dose, 2 drops.
August 10th.—Temperature, 100.4° F.; dose, 2 drops.
August 13th.—Temperature, 100.4° F.; dose, 3 drops.
August 17th.—Temperature, 99.4° F.; dose 3 drops.
August 20th.—Temperature, 99.4° F.; dose, 3 drops; weight, 112 pounds.
August 25th.—Temperature, 99.2° F.; dose, 2 drops.
September 3d.—Temperature, 99.6° F.; dose, 2 drops.
September 10th.—Temperature, 99.8° F.; dose, 2 drops; weight, 113 pounds.
September 17th.—Temperature, 99.4° F.; dose, 2 drops.
September 26th.—Temperature, 99.5° F.; dose, 2 drops.
September 30th.—Temperature, 99.2° F.; dose, 2 drops.
October 3d.—Temperature, 98.7° F.; dose, 2 drops.
October 8th.—Temperature, 99° F.; dose, 2 drops.

At this time the patient was much improved and left the city. While away she was quite ill with a severe cold, under the care of Dr. T. A. Pease, of Norwood, N. Y., who wrote me of her condition. Under his care she finally improved sufficiently to return home, and special treatment was resumed December 28th.—Temperature, 99° F.; dose, 1 drop; weight, 112 pounds.

January 3, 1892.—Temperature, 99.2° F.; dose, 1 drop.
January 8th.—Temperature, 99° F.; dose, 2 drops; weight, 112 pounds.
January 16th.—Temperature, 98.5° F.; dose, 3 drops.
January 23d.—Temperature, 99.5° F.; dose, 3 drops.
January 30th.—Temperature, 98.8° F.; dose, 3 drops.
February 6th.—Temperature, 98.8° F.; dose, 2 drops; weight, 118½ pounds.
February 13th.—Temperature, 98.5° F.; dose, 2 drops.
February 29th.—Temperature, 98.5° F.; dose, 2 drops.

The only other treatment which this patient received under my care was a mixture containing the hypophosphites and Clermont's syrup of the soluble arsenite of iron.

The patient is at present free from cough and expectoration, and wearing the general appearance of health. Was seen May 31, 1892, at which time she appeared perfectly well and weighed 121½ pounds.

Case IV.—Miss H——, native born, nineteen years of age, consulted me April 15, 1891, and gave the following history: Father and maternal aunt died of phthisis. Mother has had several attacks of hæmoptysis, but is still living. Two months previous to date named she took cold and felt pain on the left side of chest, about the second and third intercostal spaces, extending through to the subscapular region posteriorly. Has a very troublesome cough, which especially disturbs her at night and in the morning. Expectorates much muco-purulent matter which was examined by Dr. Charles L. Allen, and found to contain a large number of tubercle bacilli. Sweats every night. Appetite, poor; emaciation, marked; body weight, 117 pounds; temperature, 101.5° F.

Left chest showed diminished expansion with dulness on percussion in infra-clavicular region, increased dulness extending downward. There was infra-clavicular flattening, and auscultation revealed harsh bronchial breathing,

with loud moist crepitation. Lower down there were some fine dry and moist râles. These latter sounds were heard both anteriorly and posteriorly. Fremitus increased on left side.

On right side the percussion note was modified, and moist crepitation with increased fremitus were noted in the upper and middle portions of the lung. The first hypodermic was given April 20, 1891. Temperature, 103.5° F.; dose, 1 drop.

April 23d.—Temperature, 102.2° F.; dose, 2 drops.

April 27th.—Temperature, 104° F.; dose, 3 drops.

May 1st.—Temperature, 100.8° F.; dose, 3 drops.

May 9th.—Temperature, 100.4° F.; dose, 3 drops; night-sweats and cough ameliorated.

May 14th.—Temperature, 102.5° F.; dose, 3 drops.

May 17th.—Temperature, 100.8° F.; dose, 3 drops.

May 22d.—Temperature, 101.8° F.; dose, 3 drops.

June 10th.—Temperature, 99 8° F.; dose, 3 drops. Has no night-sweats, and menstruation, which has been suppressed, was restored. Upon examination of the chest the respiration was clearer; cough and expectoration less. Sleeps well at night; looks better; weight, 120 pounds.

July 27th.—Temperature, 102.8° F.; dose, 3 drops.

August 3d.—Temperature, 101.4° F.; dose, 3 drops.

August 10th.—Temperature, 100.4° F.; dose, 3 drops.

August 17th.—Temperature, 102.4° F.; dose, 3 drops.

August 24th.—Temperature, 102° F.; dose, 3 drops.

September 7th.—Temperature, 101° F.; dose, 3 drops.

September 14th.—Temperature, 101.5° F.; dose, 3 drops.

October 1st.—Temperature, 101.4° F.; dose, 3 drops.

At this time the patient was so much better that she married and left my charge for two months, returning for treatment the latter part of December, with return of her symptoms.

December 21st.—Temperature, 102° F.; dose, 3 drops.

December 27th.—Temperature, 98.5° F.; dose, 3 drops.

During January and February she became so debilitated that she could not visit the city for treatment, and the injections were continued by Dr. C. L. Allen once a week at her home. During much of this time she was confined to her bed, and when visited on one occasion by me, I left her with little expectation of seeing her out again. Dr. Allen, however, visited the case and administered the injections regularly up to April, after which time she rapidly improved in health. A letter of recent date from her husband informed me that she is continuing to improve rapidly—goes out walking every day, has been to the city on shopping expeditions without feeling fatigued, and in every way shows that she is stronger and better than she was last autumn. She seldom coughs and expectorates little. Continuing, he says that she eats and sleeps well, and looks fifty per cent. better than she did three months ago.

This was one of the most unpromising cases, and the result of treatment has been as unexpected as it is gratifying.

Besides the gold and manganese injections the patient received from time to time only such medication as the urgency of the symptoms required, such as remedies to allay cough, cardiac stimulants to alleviate asthenia, etc. Whatever eutrophic effect has been produced must alone be attributed to the hypodermic use of the gold and manganese fluid.

Case V.—Mr. D——, native born, aged twenty-eight, married, consulted me August 3, 1891. Mother and brother died of phthisis. November, 1888, had a cough followed by hæmoptysis. Cough continued more or less up to August, 1889, when it again became more severe, and again he had hæmoptysis. In July, 1890, he was again troubled with coughing, and at this time felt pain in the chest followed by hæmoptysis. After this the cough lessened and he felt better till August 1, 1891, when the same pain in the chest returned, with cough and hæmoptysis in an aggravated degree. He then began to lose appetite, feel weak, and expectorate. Upon examination, dulness was discovered over right apex, and percussion was not clear over the left. In the right region respiration was bronchial, and moist râles were plainly heard. There were pleuritic adhesions at the base of the right lung, and the respiratory murmur was feeble over the lower lobe. The patient was put upon the peroxide of hydrogen internally, with gold and manganese injection. The first injection was given August 3, 1891.

August 4th.—He had a pretty severe hemorrhage.

September 4th.—Body weight was 128 pounds, appetite improved, and cough ameliorated.

The last injection was given November 20th, at which time he weighed 133½ pounds. His appetite had returned. He had no cough and felt fully restored. The patient, when seen a few weeks ago, was in good physical condition, and said he had no cough and felt stronger and better than he had for a long time.

I have other cases equally as interesting, but will not take up more of your time with these statistics, for the cases quoted will suffice to show in a general way the practical bearing and value of the method of treatment under discussion.

There is a growing necessity arising for the establishment of a sanatorium, near the city of New York, for the reception and special treatment of the particular class of cases above referred to, which must sooner or later take form and express itself in the founding of an institution on such a scale as to be within the reach of others than the wealthy. Such an institution is now in process of erection at Brentwood, Long Island, the location being especially adapted by its soil, environment, and all important requirements.

I point with a feeling of just pride to the superb generosity of our profession! What other class of men than physicians contribute more liberally and freely of their substance, skill, and intelligence to the necessities, and even comfort, of the physically afflicted of the human race?

1013 Madison Avenue.

The Mattei Exposure.—The committee which was appointed some time ago to investigate the Mattei system of curing cancer "without the knife," has found, as might have been expected, that it is pure humbug and quackery. The Matteists began to treat five cases of genuine cancer, but soon said that it would take too long to cure them, and wanted the committee to examine some cases which they claimed had been cured by them. This the committee naturally refused to do, having not the slightest proof that the persons presented had ever had cancer. Finally the Matteists refused, with a great show of indignation, to permit the investigation to go on, alleging that the committee had broken faith by speaking of the course of the experiments before they were concluded. The chairman of the committee, Dr. G. W. Potter, publishes these facts in the *British Medical Journal* of August 13, 1892, and concludes as follows: "Matteism, in the deliberate judgment of the committee, consists exclusively of vulgar, unadulterated, unredeemed quackery. Mr. Stokes analyzed the 'electricities,' the potions of the Matteists, and found them to yield no other reaction than that of plain distilled water. The results of administering these substances to patients entirely coincided with the results of chemical analysis. Water is the potent magician which, when taken in unquestioning faith, makes some of the deluded victims of Matteism feel that they are relieved of their pains. Even the poor creature whose cancerous growth is ulcerated and excavated, and whom the Matteists themselves admit to be 'worse,' persists in declaring herself improved, and pathetically anticipates the day of her perfect cure."

OVARIOTOMY IN THE PRESENCE OF PERITONITIS.[1]

By WILLIAM S. CHEESMAN, A.M., M.D.,
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No surgical emergency presents a picture more impressively grave than an ovarian growth complicated by an acute peritonitis. In such cases the older surgeons simply looked on, too much appalled to interfere, the disease making off with the patient under their very eyes. One of the earliest operators to offer surgical resistance in defence of his charge was Keith, who, after witnessing deaths by inflammation of the sac, cut in boldly and saved many lives. In these days one peruses scarcely any table of operation statistics involving one hundred cases without finding from one to four or five in which the operation was done in the presence of peritonitis, and a cursory review of the literature reveals many scattered single successes. Instead of the rule being, as in former days, to await the subsidence of the peritonitis before operating, it is growing to be—operate at once, and wait for nothing. And this for several reasons.

In the first place, the tumor is the *cause* of the peritonitis. By its mere presence, or by the friction, stretching, and contusion involved in its movement with every change of posture, an ovarian neoplasm is able to light up inflammation of the delicate lining membrane. The graver types of peritonitis are, however, usually produced by changes in the cyst. Inflammation of the sac, going on, it may be, to suppuration; rupture of surface cysts with irritating contents; twisting of the pedicle, producing necrosis and possibly bursting of the growth and outpour of gangrenous fluids; any of these may set up a peritonitis which cannot cease till its cause is removed.

A second reason for prompt operation is found in the fact that acute peritonitis itself may often be best dealt with by abdominal incision and drainage. As has been said by M. D. Mann, the peritoneum, like the pleura, should be drained when pus is present. The literature in support of this thesis is rapidly becoming extensive. In all lands surgeons are coming forward with records of operation triumphs. In tubercular peritonitis, general and encysted, in purulent puerperal peritonitis, even in the so-called idiopathic peritonitis of children and adults, the knife and drainage-tube are gaining ground on morphia and poultices. In the cases under consideration laparotomy is thus sound treatment for the peritonitis as well as for the tumor.

In the third place, nothing is gained, and everything is hazarded, by delay. Peritonitis is about the most serious thing that can happen after abdominal section, and that is already present. It cannot be made worse by operating. There is no question of jumping from the frying pan into the fire; you are in the fire already. Expectancy, delay, non-interference, are like the Governor's refusal to interfere with the execution of sentence of death. A few cases may survive the acute, and enter the chronic, stage of a peritonitis; but with the result that adhesions have become universal and highly vascularized, to the embarrassment, perhaps the defeat, of the operation when finally attempted.

The duty of prompt action seems thus plain. The sole question really demanding consideration is—How far can we go in our promptness? Shall we operate during shock? For this, I think, no hard and fast rule can be formulated. Each case must stand by itself. If the shock depend on twisting of the pedicle, or rupture of a suppurating cyst, reaction may never come. It is now or never. In selected cases, on the other hand, it may be safe to await reaction. The surgeon must be governed by that intuition which is the resultant of his knowledge of the case's history, his guess as to the cause of the sudden and tragic *dénouement*, his sizing-up of the patient's vital resources; in short, it is purely a question of judgment, with a capital J.

Shall we operate during acute peritonitis, or wait till the stress of symptoms has blown over? Knowlsley Thornton (*American Journal of the Medical Sciences*, October, 1888, p. 371) says: "The more I see of abdominal surgery the more I am convinced that operation during acute peritonitis is very dangerous, whereas in the subacute and chronic stage the patient bears the operation as well, or better, than with a perfectly healthy peritoneum." Here, again, it would seem wiser to leave the question to individual judgment based on knowledge of the peculiar features of each case.

All these considerations have in my experience recently received fresh emphasis from a case whose history was as follows:

Miss W——, aged twenty-seven, had for some time observed that her abdomen was enlarging, but had given the matter no attention. During the last Christmas holidays she suffered somewhat from pain, but this did not prevent her being out and about as usual. On January 4, 1892, she returned to her duties as a teacher in Chambersburg, Pa, where, on January 9th, she was seized with acute peritonitis. For a week her life was in great danger, complete intestinal obstruction with stercoraceous vomiting occurring. Out of this she made a gradual but imperfect recovery, and on February 11th, though her temperature had at no time been quite normal, her physician, Dr. Johnston McLanahan, allowed her to start for home. She bore the journey well, reaching Auburn February 14th.

I saw her, first, February 17th. She had then a temperature of over 100° F., and the abdomen was very tender. A letter from Dr. McLanahan was given me, stating his opinion that an ovarian tumor was at the bottom of the trouble. An examination verified his view. A fluctuating neoplasm reached above the umbilicus midway to the ribs, and well toward either flank. The uterus lay behind this mass. The menses were present at this time.

I determined to operate so soon as the patient was in a little better condition, and prescribed tonics and a generous diet. Two days later, however, she suffered a sudden relapse of her peritonitis, accompanied by great pain, and passed rapidly into collapse, with weak, rapid pulse, cold extremities and face, profuse cold sweats, and vomiting. This lasted thirty-six hours, when the pulse strengthened and the temperature rose to 102½° F. During the hours when it was doubtful how the shock would end, I had determined to operate just as soon as my patient could endure it, if that time ever came. Accordingly, with the beginning of her rally, preparations were immediately made. A room was stripped of carpet, hangings, and all needless furniture; walls and floor were washed with soap and bichloride solutions, the patient was bathed and douched, and on February 25th I operated, assisted by Drs. A. S. Hickey, F. H. Parker, and J. M. Jenkins.

The patient's temperature when she was placed on the table was 100½° F.; the pulse 120, and of fair quality. The usual shaving and cleansing with soap and water, ether, alcohol, and bichloride, were fully carried out. Instruments had been boiled in soda-water.

A four-inch incision was made. On opening the peritoneum a large amount of coffee colored serum gushed out. The membrane itself was intensely red, and covered with patches of lymph. The intestines were glued together. The cyst-wall, roughened and red from peritonitis, at once presented, and I tapped it, giving exit to a black, grumous material. The cyst was drawn forward through the incision as fast as it could be emptied, and freed. Adhesions existed everywhere, mostly young and easily broken by the fingers, but in the true pelvis they had become strong, and some force had to be used to break them. A small surface-cyst was here found ruptured, its thick, dark contents lying in the *cul-de-sac*. I could not be certain whether I had torn it, or whether it

[1] Read before the Medical Association of Central New York, May 11, 1892.

had burst spontaneously before the operation, and perhaps been the cause of the sudden collapse of the preceding few days. The pedicle was ligated with sterilized braided silk, and the cut surface cauterized with the Paquelin. The other (right) ovary was healthy. The tearing loose of so extensive an adherent surface was followed by free oozing of blood. The abdomen was repeatedly douched with hot boiled water till hemorrhage ceased. Iodoform gauze was then packed into the *cul-de-sac* and drawn through a glass drainage-tube. Wound closed with sterilized silk. Iodoform gauze dressing. Time of operation, fifty minutes.

Considerable shock followed. The temperature fell to 96½° F., the pulse ran feeble at 122, but by afternoon reaction had begun Some pain was complained of, and quieted with morphia. The next day the temperature reached 103°, but fell by evening to 99½° F., and never afterward rose above 101° F., and that but once. The bowels moved freely on the third day. Nausea gave no trouble. There was considerable oozing of bloody serum for several days. The glass tube came out on the fifth day, and a rubber one took its place for a time, after which gauze drainage was used till the drainage tract closed. Sutures were removed the eighth day, complete primary union having occurred.

Convalescence was uneventful. A slow and gradual fall of temperature, which did not remain at the normal throughout the day until the third week, registered the gradual subsidence of the peritonitis. At the end of four weeks the patient was able to be about as usual.

THE TREATMENT OF CHRONIC NERVOUS DISEASE IN PATIENTS OF THE RHEUMATIC DIATHESIS.

By ARTHUR C. BRUSH, M.D.,

BROOKLYN, N. Y.

The etiological relationship of the rheumatic poison to the various forms of acute and chronic nervous disease has long been recognized; but its importance as an indication as to the therapeutic measures to be employed has not received the attention which the results obtained in the following cases would seem to justify.

In the set of cases to which I wish to call attention we have the symptoms of the rheumatic diathesis preceding and accompanying those of the nervous disease; and, though these cases are not uncommon, writers seem to have confined themselves almost exclusively to the treatment of the latter disease, ignoring, except in the neuralgias, the cause which lies behind the trouble.

By the rheumatic diathesis I mean those cases which suffer from frequent attacks of pain and stiffness in one or more joints, sometimes swelling and redness, irregular pains referred to the bones and fibrous structure, cephalalgic, neuralgic, and myalgic attacks. They are also apt to suffer from digestive disturbances, and are irritable and depressed. They are usually worse before and during damp weather.

The rheumatic poison has a selective action upon the connective structures of the body, causing in them at first congestion, and, if long continued, hyperplastic inflammation; and these are the pathological changes found in the delicate connective tissue framework of the nervous system in the set of cases now under consideration.

We would seem, then, to have a certain number of the hyperplastic inflammations of the brain and cord whose cause is one that can sometimes be removed or held in check by the use of anti-rheumatic drugs. I do not mean that the nerve-cells which have undergone parenchymatous degeneration as the result of the pressure produced by the formation of such new connective tissue will be restored, but that we may be able to check the further formation of such deposits, or remove them, or at least to relieve the local congestion, and thus remove the pressure effects.

In the following cases it will be seen that they presented a well-marked rheumatic history preceding the development of the nervous disease, that the treatment was principally an anti-rheumatic one, that each exacerbation of the rheumatic symptoms was accompanied or followed by a similar one of those of the nervous disease, and that the symptoms of both improved under the use of anti-rheumatic remedies.

That the joint symptoms found in these cases were not those often found in chronic interstitial disease of the cord is evident, for it will be seen that they existed a long time before the development of the nervous symptoms, while those of nervous disease occur late in the course, and that they were all characterized by local pain and redness, while acute symptoms are absent in typical trophic joint-disease; and that they were most constant in the small joints of the hands and feet, while the others are most common in the knee and hip.

Of course it is possible that the improvement in these cases was due to the occurrence of one of those periods of improvement so often found in them; but the fact that it occurred in all of them after an anti rheumatic plan of treatment was commenced, seems to suggest that it was not a mere coincidence, but due to the treatment employed.

The following four cases are the ones in which this plan of treatment has been employed:

Case I. *Locomotor Ataxia.*—H. H——, aged forty-eight; married. First seen June 11, 1891. He has suffered from subacute rheumatism affecting the small joints of the hands and feet for the past ten years, which show the characteristic changes. His present trouble has existed over a year. Complains of severe shooting pains in the legs and occiput; sometimes severe gastric and vesical pains accompanied with vomiting and dysuria. Eyesight poor and pupils minutely contracted. Patellar reflex diminished. Feelings of numbness in the feet. Frequent seminal losses. Gait ataxic. Cannot stand with the eyes shut or place finger on the end of his nose. During the past few months he has developed an ataxic aphasia. Memory very poor, and well marked melancholia. Ordered sod. salicyl., gr. x., three times a day.

September 29th.—Patient gradually improved until yesterday, when he developed pain, redness and swelling in the feet and hands, which was followed by a return of his nervous troubles. Medicine continued.

October 13th.—Patient slowly improved since last note until two days ago, when both his rheumatic and nervous symptoms became much worse.

November 19th.—Condition unchanged since last note, and there is now also constant and severe pain in his hips and knees. Ordered pot. iodid., sod. salicyl., and colchicum.

March 17th.—Patient has been kept constantly on the same treatment since last note, and steadily improved. To-day he has no rheumatic symptoms, or neuralgic or visceral pains. Eyesight improved, and pupils normal. Tendon reflex diminished. No sensory disturbauces. Ataxic symptoms much improved, especially the aphasia. Memory improved; no melancholia.

Case II. *Multiple Cerebral Sclerosis.*—J. G——, aged fifty-seven; United States; widower. First seen October 13, 1891. He has suffered from rheumatic attacks since the war. Thinks his nervous troubles commenced about seven years ago. Has a well-marked tremor, increased by voluntary motion in the muscles of the arms and depressors of the jaw. Complains of weakness in the legs, and walks with a cane. Gait slightly ataxic. Articulation slow and monotonous. Memory poor, confusion of thought, vertigo, and constant headache, with insomnia and melancholia. Eyesight poor, cornea clouded, pupils contracted. There is loss of sensation in the parts supplied by the right musculo-spiral nerve. Constant pain in the lumbar region, pain and stiffness in the hip-joints and small joints of the hands and feet, which are also swollen and tender. Ordered sod. salicyl.

November 19th.—All his symptoms had markedly improved up to three days ago, his muscular tremors being hardly noticeable, and the anæsthetic area disappeared, when he developed a sharp rheumatic attack, which was followed by a return of his nervous symptoms with increased violence.

December 12th.—All the symptoms improved except the insomnia, headache, and pain in the back.

December 29th.—Symptoms unchanged, except increased vertigo, and he is very dull and apathetic. Ordered pot. iodid., sod. salicyl., and colchicum.

January 12th.—Marked improvement; no rheumatic symptoms. Ordered strychnine and quinine.

January 26th.—Rheumatic symptoms returned, with increased tremor in the right hand. Ordered sod. salicyl. resumed.

March 15th.—Marked improvement. No joint symptoms. Eyesight and memory much improved. No muscular tremors. Walks without his cane. Feels bright and cheerful.

March 29th.—Complains of dull pains in the bones of his legs, and return of tremors in the right arm and left gluteus maximus. Ordered pot. iodid., sod. salicyl., and colchicum.

April 12th —No rheumatic symptoms, but nervous ones are increased, with insomnia and drowsiness. Ordered pot. iodid., liq. pot., tr. gent., and syr. sarsaparil.

April 28th.—The only symptoms to-day are slight insomnia and drowsiness, with tremor in the right arm and pain in the back.

May 26th.—Tremor and pain unchanged, no insomnia or drowsiness. Ordered salol.

Case III. *Multiple Cerebral Sclerosis.*—M. D——, aged fifty; United States; married. First seen July 7, 1891. Has had frequent attacks of acute articular rheumatism for the past twenty years; her nervous symptoms have existed for several years. Complains of vertigo, mental confusion, lightning pains in the legs, and a feeling of some soft body between the foot and the ground. Well-marked ataxia of both arms and legs, and tendon reflex almost absent. Marked muscular tremors in the arms, made worse by voluntary effort. Speech slow and often incoherent. All the joints of the left leg are swollen and tender. Ordered sod. salicylate.

September 15th.—She had improved steadily, especially her ataxic symptoms, and the tendon reflex was much increased until a week ago, when she developed rheumatism in both knees and ankles, and all her nervous symptoms became worse.

November 7th.—Mental condition improved. Only disturbance of sensation is pain in the right lumbar region. Muscular tremors and ataxia improved. No rheumatic symptoms. Ordered strychnine, quinine, and arsenic.

December 26th.—She has had an attack of acute rheumatism in the left arm, followed by increased muscular tremor, vertigo, insomnia, cephalalgia, and pain in the back. Ordered sod. salicyl.

March 19th.—Rheumatic symptoms disappeared two weeks after last note, and the tonic treatment was resumed, with steady improvement. There is now no insomnia; confusion of thought, memory and speech are normal. There is slight lumbar pain, muscular tremor on motion, well marked ataxia, and diminished tendon reflex.

Case VI. *Locomotor Ataxia and Spinal Meningitis.*—D. M——, aged forty-nine; United States; married. First seen July 14, 1891. He has had frequent attacks of rheumatism since his tenth year. Nervous troubles commenced about two years ago. Complains of loss of memory, confusion of ideas, and insomnia. Eyes congested, night blindness, loss of accommodation, and contraction of the pupils. Tinnitus aurium. Slight ataxic aphasia. Pain over the dorsal spine, girdle sensations, and lightning pains in the thighs. Slight ataxia of both arms and legs, with unnatural fatigue and a sensation of constant coldness of the feet. Loss of sexual power. Frequent and imperfect micturition. Bowels constipated. Ordered potas. iodid., sod. salicyl., and colchicum.

July 18th.—No insomnia. Neuralgic pains in left face and neck.

July 26th.—Intense pain and rigidity of the spine, muscular cramps and neuralgic pains in the limbs, and increased insomnia. Ordered pot. iodid., liq. potas., and blister over the spine.

August 1st.—No spinal pain or rigidity. Pain, swelling, and redness about the right shoulder and ankle-joints. Ordered sod. salicyl., pot. iodid., and colchicum.

August 27th.—Rheumatic symptoms improved, nervous ones worse, especially the ataxic, and also has frequent attacks of cardiac palpitation and dyspnœa.

September 5th.—No rheumatic symptoms, and nervous ones improved.

November 28th.—Patient has been kept steadily on the same treatment since last note, and has had but one slight rheumatic attack. His nervous symptoms are about the same. Ordered strychnine, arsenic, and quinine.

January 9th.—Steady improvement since last note; has had two slight rheumatic attacks, easily controlled by sod. salicyl.

March 22d.—Patient has now no insomnia or confusion of ideas. Articulation much improved. Some pain over dorsal spine, but no other abnormal sensations. Muscular co-ordination and tendon reflex normal. No sexual desires. Bladder and rectal troubles about the same.

April 9th.—Pain and swelling in the ball of left great toe. Misplaces words when writing. Muscular tremors after a few minutes' exertion. Ordered pot. iodid., sod. salicyl., and colchicum.

April 14th.—No rheumatic symptoms, nervous condition about the same, with irregular heart action, and once in a while he has a long, sighing inspiration. Ordered strychnine and arsenic.

April 26th.—Patient has no objective or subjective symptoms to-day, except a feeling of languor. Ordered Bland's pill.

May 27th.—Patient has remained well since last note, and has returned to work.

These four cases, taken from my clinic at the Brooklyn City Dispensary, are the only ones which I have been able to retain a hold upon long enough to obtain any satisfactory results. Of course, belonging as they do to the rheumatic diathesis, they are liable at any time to a return of that disease, and, as a consequence, of their nervous troubles; but I think the result thus far obtained would warrant its further trial in these otherwise hopeless cases.

Hydrastinin in Epilepsy.—V. G. Kiseleff (*Vratch*, No. 20, 1892), experimenting on dogs and guinea-pigs, has found that intravenous injections of hydrastinin (see *Epitome*, April 23, 1892, p. 66; and May 28th, p. 87), even in small doses (0.04 gramme per 1 kilogramme in dogs), distinctly lowered the excitability of the brain cortex, and mitigated or prevented epileptic fits induced by absinthe. These observations induced him to try hydrastinin in six cases of epilepsy. It was given internally, in an aqueous solution, from one-fifth to one-half grain for a dose, up to one or two grains a day. In four patients, in two or three weeks the fits decreased both in frequency and in intensity, while in the remaining two the treatment was less efficacious. No unpleasant accessory effects were noticed. F. Kh. Gadziacki also employed hydrastinin in a case of epilepsy, but without result. The hydrastinin treatment of epilepsy, as well as of hydrophobia and strychnine poisoning, was first suggested by P. I. Arkhangelsky (*St. Petersburg Inaugural Dissertation*, 1891, No. 59), whose experiments on animals showed that the alkaloid ($C_{11}H_{12}NO_2$) possessed powerful antispasmodic properties.—*British Medical Journal.*

Progress of Medical Science.

Removal of a Bony Growth from the External Auditory Canal by Means of Drills.—Dr. Samuel Sexton reports a case of the above which he saw recently in the practice of Sir William B. Dalby, of London. The growth, which was a hyperostosis quite occluding the right external auditory canal in a gentleman forty-two years of age, was first pierced by a small drill run by an American dental engine, and then several larger ones were introduced, until the bony tumor was honey-combed. In a few days the remaining mass came away, and when Dr. Sexton again saw the patient, three weeks after the operation, the external auditory canal was freely open and the parts were healed. These growths in the ear are said to be of frequent occurrence in England.

Psoriasis a Neurosis of the Skin.—The *British Journal of Dermatology*, October, 1891, contains an abstract of a highly instructive and original paper recently published by Dr. A. G. Polotebnoff, in which the author expresses the opinion that psoriasis is the result of nervous disturbances, that it is a neurosis of the skin. Other theories in regard to cause he carefully considers, such as heredity, parasitic influence, hereditary syphilis, arthritism, the herpetic diathesis of the French school, and infectious disease, and finds these unsatisfactory and insufficient. Psoriasis is not an inflammatory process. It is connected with dilatation of the vessels of the papillæ of the skin, and accompanied by an increase in the formation of epithelial cells. Changes in nerve tissue have not been described, probably because not properly sought for. The original Russian publication records sixty-seven cases, arranged for convenience in eight classes. Of these the English journal reviews twenty-eight cases, in which severe headache, marked neuropathic affections in the family, coincidence of eruption with severe psychic shock, evident clinical abnormities in the nervous system, diseases of bones and joints, typhus fever, and intemperance comprise the origin or manifestation of nervous abnormity. The symptoms in all may be classed as vaso-motor neuroses. They refer chiefly to the action of the heart and blood-vessels, to temperature, and to the action of sweat glands. Perspiration is entirely in abeyance in the diseased spots, though there is no alteration in the glands themselves. Treatment is directed almost exclusively to the nervous system. The drugs indicated, whenever there is prominence of acute nervous symptoms, are bromine salts, bromide of potassium, bromide of sodium, and hydrobromide of quinine. As soon as acute symptoms are allayed, and even before, Dr. Polotebnoff gives arsenic, a drug that has special affinity for nerve tissue. Skolobusow found in acute and chronic arsenical poisoning that the brain and medulla contained thirty times as much arsenic as the liver and muscles. Lesser's experiments are still more conclusive. The dose of arsenic is gradually increased until half a grain a day is taken for a week or a fortnight. Relapses must be looked for, as primary vaso-motor and functional neuroses are not cured in a day. Inveterate cases where there is much nerve change resist arsenic even in large doses. Ergot the author considers worthy of more attention than it has yet received. Cold packs, tar, chrysarobin, pyrogallic acid are also useful. Though applied externally, these may act as nervine tonics through the skin.

Curetting in Lupus.—Dr. Broca's communication to the French Dermatological Society upon the subject of sharp curetting for the amelioration of lupus appears in the *Mercredi Médical*, December 16, 1891. This procedure, common in Germany, where it was first introduced by Volkmann, has never met with much favor in France. Deep scars are said to follow it, and the patient is supposed to risk acute tuberculosis through traumatic auto-infection. While not partial to this method of treatment, Dr. Broca considers it indicated in certain cases. Those that he cites show interesting results. In the first, the disease appeared upon the back of the left foot, rapidly extending over the anterior surface of the leg, knee, and thigh. To treat such a condition by galvano-cautery or scarificator would be an affair of months or years. New nodules would appear as rapidly as others could be effaced. This extensive surface was curetted at a single operation under chloroform, with cicatrization of the whole area within three weeks. This, without suppuration or significant rise of temperature. In the opinion of the operator, deep and deforming scars are due to suppurating processes. The technique of this operation is simple. First, there is energetic curetting of the soft layers. Then the hard, fibrous tissue beneath is removed. In the foregoing case, this removal was from the large toe up to the thigh, thick tampons of antiseptic cotton being applied instantly to the denuded surface. Hemorrhage being arrested, sterilized compresses were applied, the parts being touched by a 1 to 10 solution of chloride of zinc, and then covered with iodoform gauze. In the other cases, one in a youth of twenty, presenting lupus of the face and forearm, and a boy of fourteen, in whom lupus of the face had existed thirteen years, the operation proved equally successful. None of these patients are cured, the radical cure of lupus being as yet unknown. But they are greatly benefited, their apparent cure requiring only three or four weeks. Surgical interference requires less time than other methods of treatment, and in these cases presented the most rational plan of procedure.

Vulvar Pruritus Cured by the Constant Current.—In the *Union Médicale*, November 10, 1891, quoting from the *Revue de Thérapeutique Générale et Thermale*, 1891, a cure of pruritus of the vulva is recorded by Dr. Cholmogoroff. The patient, who had suffered two years from pruritus, was thirty-six years of age, married at twenty-four, and had one child. Menstruation, beginning at the age of thirteen, had always been regular. There was no sugar in the urine, and no utero-ovarian trouble of any kind. Vaseline with cocaine and carbolic acid lotions procured some relief. The condition was always much aggravated just before menstruation, varying in intensity at other times. Electricity was employed, with the effect of relieving the patient greatly after the fifth application, and causing the trouble to disappear entirely after the sixth. A hard rubber electrode negative, with a metal tip, was introduced in the vagina, and a flat electrode applied over the affected surface. The current, used for ten minutes each time, varied from fifteen to twenty-two milliampères. There was no return of the difficulty up to date, six months after its cure.

Lichen Planus Treated by Hydrotherapy.—Among interesting items of correspondence contained in the *Journal of Cutaneous and Genito-Urinary Diseases*, January, 1892, there is an account of Jacquet's case of lichen planus treated by tepid douches, followed by a short cold affusion. This treatment, instigated after the complete failure of glycerole, of tartaric acid, baths, and Fowler's solution, allayed nervous symptoms in a few days, restored sleep and appetite, and calmed all pruritus. The eruption began to diminish in about three weeks. After slight recrudescence it disappeared entirely in six weeks. This result emphasizes anew the close relation existing between modifications of the nervous system and lichen planus, though the connection between the cerebro-spinal system and the cutaneous lesion is as yet unknown.

Aleuronat for Diabetics.—Aleuronat is the name of a vegetable albumin introduced by Hundhausen, which Erbstein has found very useful as a substitute for bread in diabetic cases. It is a dry, yellow powder, without taste or smell, containing eighty per cent. or more of nitrogenous elements and only about seven per cent. of carbo-hydrates. He employs it in preparing soups and other dishes, as well as in making bread, which shows sixty-six per cent. of nitrogenous matter.

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THE CHOLERA OUTLOOK.

NOTWITHSTANDING the extraordinary precautions taken to prevent the entrance of cholera into New York we are forced to view the present outlook with grave concern. With the best of promises against invasion, it behooves us to be prepared in time for the worst. The many ways in which the strictest quarantine can be oftentimes evaded, the numerous avenues through which a plague may enter our unprotected land routes, the difficulty in educating the public to a proper sense of responsibility in protective measures, the pecuniary interests that are in direct antagonism to the restriction of personal liberty in travel, and the pressure to overcome the necessary hindrance to commercial transfers, are factors which weigh with the greatest possible force against the best intentions of the most trustworthy officials.

Such is the situation at the present writing, and, while hoping for the best, we need not be surprised at any time to hear that the dreaded plague has surreptitiously appeared in our streets. Once here, we may have every reason to view the prospect with the greatest alarm. With commendable zeal the different departments have worked with the energetic Health Board in preparing for the attack; but we must not shut our eyes to the fact that there is still an abundance of filth in different quarters in, and out of doors, to furnish the proper soil for a most formidable epidemic.

Whatever may be the outcome of our anxiety, it is quite certain that the health authorities and the medical profession will be ready for any emergency. Suspicious cases will be anxiously watched and speedily reported, and everything will be done to aid the sanitary officials in their endeavor to arrest the progress of the dreadful malady.

Since the last epidemic visited this city we have learned very much of the natural history of the disease, and are consequently the better able to fulfil the indications for treatment. It is well for the public to know that as yet no cure-all has been discovered. Notwithstanding the general principles of medication are quite clearly understood, each case must, from a strictly scientific stand-point, be treated on its own merits. Wholesale medication, as a rule, is bad, even when emergencies might appear to make such a measure necessary. Self-prescribing is even worse, and should be discouraged by all those in authority. Patent mixtures and so called specific remedies for cholera should be avoided almost as strictly as the plague itself. Those who may unfortunately be stricken will not lack for competent medical treatment, and there will be no necessity for newspaper prescriptions, nor consequent loss of precious time in the applications of the proper remedies to individual cases. It must be borne in mind in this connection that the cases seen the earliest in the attack are those which are benefited, while the remainder are apt to drift into collapse and furnish the fifty per cent. death-rate.

Much has already been done by the health authorities in educating the public in precautionary measures against the spread of infection, but there is evidently much still to be accomplished before we can guarantee that the disease will not spread in a properly receptive soil in spite of the best efforts to the contrary. It is quite certain that the poison is carried by clothing, food, and water which have become in some way infected by the ejecta of the sick; that the bacilli find their way into the body through the alimentary canal, and eventually exert their toxic influence on the nervous centres, and that thoroughly systematic preventive antisepsis reduces the danger to a minimum. That it is not absolute, however, is oftentimes proven by a fixed limit of epidemic influence and a graded march of mortality from the beginning to the end of the visitation.

Experience has proven that with proper care the worst epidemic can speedily be brought within bounds, and that the number of victims attacked can be steadily reduced. While there is no possibility that our health board will follow the melancholy example of the authorities at Hamburg, in negligently allowing the scourge to gain a headway, there is abundant encouragement for the adoption of the stringent systematic measures employed in Berlin in checking a threatened epidemic. In order, however, that such results may be possible, each citizen, in his individual capacity, should do his best to conform to hygienic rules, and willingly and promptly set his house in order.

On the other hand, a great deal can be accomplished by properly guarding one's self against an attack. Full health in the individual is, perhaps, the greatest safeguard of all. Bacteriologists who test and physicians who treat contagious diseases are always careful to be well-nourished and to make their visits immediately after meals. Their careful attention to hygienic rules undoubtedly gives them an immunity which the ordinary layman can seemingly neither appreciate nor enjoy. In every epidemic the weaker ones are attacked, while the stronger escape and offset the usual ratio of mortality. So whatever may come, the one who keeps his health-standard to the highest point is surest of escape.

THE QUESTION OF SEX IN THE BRITISH MEDICAL ASSOCIATION.

WE noted recently, as an interesting sign of the times, that the German Universities were on the eve of admitting women to their sacred precincts and giving them equal privileges with men of drinking in the words of wisdom as they fell from the lips of the learned professors. Another event of like import was the vote taken at the Nottingham meeting upon the question of admitting women to membership in the British Medical Association.

Fourteen years ago some ungallant male member of the Association proposed that a clause be added to the by-laws, providing that "no female shall be eligible for election as a member of the Association," and this proposition was agreed to by a large majority of those present at the meeting. Mrs. Garrett Anderson had been elected a member before the passage of this amendment in 1878, and, as nothing was said about expelling her for the crime of being a woman, she stayed on. Now she has had the satisfaction of seconding a resolution to expunge this offensive clause, and of seeing the resolution passed almost unanimously.

It is worthy of note that the question was forced upon the attention of the Association by the action of some Colonial branches which had welcomed women to membership. But that only accelerated matters a little, for the change was inevitable, and all the old fogies in the Association could not have delayed it much longer. At the time of the Bath meeting, when the clause was adopted, there were but eight women practitioners in the United Kingdom, whereas now there are one hundred and thirty in the *Register*, and one hundred and forty more women are studying medicine at various schools in Great Britain and Ireland. We have no doubt there were more than the four who voted against the amendment who would have been glad to do so had they dared. They saw, however, the absurdity as well as the impossibility of keeping women out of the Association when they could not keep them out of the profession, so they let them come in. It was amusing, though, to note with what a show of magnanimity, some of the speakers yielded to the inevitable, as though the change was entirely of their own doing, and was a spontaneous expression of their sense of justice and right. It pleased them, however, and the women who have carried their point don't care.

CROTON WATER.

One of the most certain means of preventing the spread of diseases such as cholera and typhoid fever is an abundant supply of water uncontaminated by any of the specific causes of these affections. And, unfortunately, it is extremely difficult for any city to obtain a perfectly pure water-supply, and one that shall in every contingency be above all suspicion. This is as true of New York as of other cities, but so much that is exaggerated and unfounded has been written against the Croton water that it seems worth while to say a few words concerning it.

The first thing to remember, and which seems to have been forgotten by some writers in the daily press, is that water cannot run up hill. There might be a thousand cases of cholera every day in this city, and if there was none in the area comprising the Croton water shed, the water-supply of New York would be irreproachable as far as relates to cholera. Again, because a water is discolored, as we must confess ours often is, it does not follow that it contains the germs of disease. The *Journal of the American Medical Association*, in commenting recently on the Croton water, said: "Albuminoid ammonia is reported by the official chemists to show a decided increase, while the presence of vegetable matter in excess is revealed by the microscope. If this condition persists, a reported increase in cases of enteric fever must be expected among those who use unfiltered and unboiled water."

Misery doubtless loves company, the fallen are prone to deny the existence of virtue anywhere, and Chicago might not be overcome with grief if New York had an epidemic of typhoid fever, but that is no excuse for talking nonsense. Albuminoid ammonia and vegetable refuse are very undesirable ingredients of drinking-water, but we have yet to learn of a case in which they were the cause of typhoid fever.

Our water is far from being what it should be. There is a large population in the district from which it is derived, and there are many nuisances allowed to exist there which ought to be abated. The water will be exposed to contamination if cholera becomes epidemic in New York, for it is highly probable that, in that event, some cases would make their way to the Croton water-shed. But even then there would probably be no great fouling of the water, for the sick would, without doubt, be properly taken care of, and their discharges would be disinfected. Moreover, a bucketful of cholera dejecta thrown into one of the branches of the Croton River would afford a pretty small per capita allowance of comma bacilli for New York City, even should none be lost on the way, or be destroyed by the other bacteria which are present in fairly generous amount in the Croton.

We have absolutely nothing to object to in the filtering and boiling of all water for drinking, as well as for washing purposes. It is an excellent practice in any city, and whether disease is present or not, and as such we commend it heartily, and would urge its universal adoption in case cholera breaks out here. But we do object to the teaching of false doctrine, even when its dissemination might frighten people into taking care of themselves.

CHOLERA AND ICE.

Dr. Daremberg, who is rather inclined to aphorisms, recently told the Parisians to boil their ice. He referred to the artificial ice which is made, by one company at least, from the water of a stagnant pool formed by the overflow of the Seine after it has received the contents of over fifty sewers. This water is apparently frozen without previous distillation, and thus, as Dr. Daremberg again neatly puts it, while Paris poisons the suburbs, the suburbs also poison Paris.

This expression, "boil your ice," seems to have tickled the professional mind, for it has been pretty extensively plagiarized in various interviews *re* cholera, its reference to poorly made artificial ice being, however, lost sight of. Thus one of London's medical baronets was asked not long ago, by a reporter, what advice he would give to the public in this time of peril. The learned gentleman, according to an English contemporary, "advised the young man, if he wished to avoid the dreaded disease, not to drink water contaminated with cholera germs or sewage, and he facetiously added that he would recommend him to boil his ice before using it." This was neatly varied by a physician in this city, who was reported by a daily paper to have tersely summed the working rules appropriate to a cholera epidemic into one: "Boil everything —except the ice, and throw the ice away."

That ice is a good culture medium for the comma

bacillus or that this microbe can worm its way into the centre of a block of ice that was frozen and cut last winter in England or America, is something rather startling to think of, and probably the gentlemen who have repeated Dr. Daremberg's "quaint saying," as the *Lancet* approvingly calls it, did not think of it at all. It is true that ice may contain the germs of typhoid fever and other diseases, and the immoderate use of even pure ice may disorder digestion, and thus prepare the way for the lodgment of the cholera bacillus; but to imply that last winter's ice is liable to be the direct carrier of the poison, in the same sense as contaminated milk or water, is absurd.

THE TWENTY-DAY ORDER.

We are pleased to learn that the reported antagonism of Health Officer Jenkins to the order of twenty days' quarantine by the President was more apparent than real, and that the full time for detention of suspected vessels will be duly enforced. The discussion of what may be considered States' rights in this matter is, under present circumstances, very properly ignored. Just now the health officer has a very responsible duty to discharge, and it does not behoove him to add to its weight by taking any accommodating chances. Instead of being tempted to shorten the period of quarantine, every opportunity should be taken to lengthen it, and thus make assurance doubly sure. This new decision will bear with force upon travellers, but the greater interests at stake are alone to be considered in the present emergency.

News of the Week.

CHOLERA NEWS.

A Fact With a Moral.—Dr. E. O. Shakespeare, in his "Report of Cholera in Europe and India," calls attention to the significant fact that cholera epidemics in Madras avoid Pondicherry, although it lies directly in their course. The explanation is to be found in the purity of the water-supply, which is derived from artesian wells.

Cholera Regulations on the Bremen Line.—The North German Lloyd Steamship Company announce that each of the steamers of that line will carry two surgeons during the prevalence of the cholera. The vessels will be thoroughly disinfected each day. Baggage will be disinfected before it is put aboard the steamers. During the voyage only water that has been boiled, or with which muriatic acid has been mixed, will be supplied to the crews and passengers.

A Volunteer Relief Corps.—The directors of St. Mark's Hospital propose to form a physicians' and nurses' volunteer corps to give free medical aid, nursing, and to supply medicines to poor persons residing in the district below Fourteenth Street east of Broadway, in case cholera should become epidemic in the city.

The United States of Colombia.—The Columbian Federal authorities issued an order on August 29th closing the ports on the Atlantic coast of Columbia to all vessels arriving from ports infected with cholera. This puts a stop at once to all commerce with Germany, but the steamers from France sail usually from St. Nazaire, so that they will not be shut out at present. If cholera should appear in New York the boats of the Pacific Mail line would come under the exclusion rule.

The Action of Canada.—The Dominion authorities have given notice to the steamship companies that any vessel attempting to bring immigrants for the United States through Canada would be detained for the period of the United States quarantine. The Quebec Provincial Board of Health has passed a resolution forbidding until further notice the bringing, either by water or land, of immigrants or the effects of immigrants within the limits of the Province of Quebec; and also forbidding any vessel coming from a port infected with cholera, or having had any cases of cholera on board during the passage, to land at any place in the Province of Quebec, or to disembark either passengers, crew, baggage, or merchandise. Inspectors have been appointed at various places to see that these regulations are strictly obeyed.

The State Board of Health has, through its secretary, Dr. Lewis Balch, addressed the following circular to all the local boards throughout the State:

"Gentlemen: Your attention is called to the published report of cholera being in France, England, and Germany. None is yet stated to be in the United States or Canada. The danger of infection, however, can be considered sufficiently imminent to warrant all precautions. While it is particularly enjoined that unnecessary panic be avoided, you are requested to take all measures for the better protection of the public health, should the disease gain a foothold on this continent. If cholera is reported in Canada, you will make such arrangements as may be necessary for the proper inspection of trains and vessels coming from there into this State. Any cases of the disease found should be at once removed to a suitable place, and all persons exposed subjected to quarantine. If the exposure is not sufficient to warrant the detention of passengers, their names and destinations should be obtained and this department notified by telegram, that it may warn the health authorities interested."

Deaths at Quarantine.—Up to the morning of September 8th, there were eleven deaths from cholera among the passengers and crews of the three infected vessels since their arrival at Quarantine. On the same vessels thirty-one died at sea.

The Cholera in Europe.—The epidemic continues with unabated force in Russia and in Hamburg, although in the latter city as well as in Russia no reliance whatever can be placed upon the official returns of cases and deaths. It is worthy of note that, wherever the officials have trusted to a policy of concealment, there the disease has carried off the greatest number of victims.

The Health Board in New York has commenced to publish daily bulletins of the cholera. Up to the present they are as instructive as the celebrated treatise on the snakes in Ireland, and it is to be hoped that the resemblance between the bulletins and the treatise will continue.

Twenty-day Quarantine.—A circular has been issued by the Surgeon-General of the Marine Hospital Service, and approved by the Secretary of the Treasury and the President, imposing a quarantine of twenty days upon all vessels bringing immigrants to this country.

The Summer Corps of the Board of Health, whose two months' term of service has just expired, has been organized into an epidemic squad of sanitary inspectors, and assigned to duty in the tenement-house districts. They have been instructed to make a special search for diarrhœal diseases, and to report any suspicious cases.

Cremation of those Dead from Cholera.—Some of the German medical journals are agitating in favor of the compulsory cremation of all who have died of cholera, as the surest means of preventing further infection of the soil by the bacilli which their corpses contain. The health authorities of this port have disposed of the bodies of all those who have died of cholera at Quarantine by cremation.

Contagion through Flies.—If, as it appears to have been proven by experiment, flies may be the means of disseminating anthrax, tuberculosis, and other infectious diseases. they should be objects of especial suspicion during an epidemic of cholera. They should be excluded from the house as far as possible, and all articles of food and drink should be protected by screens from contamination by them.

The Hamburg Authorities, unless the cable does them gross injustice, have displayed a degree of criminal inefficiency, negligence, and deceit in dealing with the cholera epidemic, that is almost incredible. For two weeks the disease was in the city, the number of victims constantly increasing, before any warning was given, and even then it was said to be only cholerine, and of very little import. The origin of the epidemic in Hamburg is also directly traceable to the stupidity of the health authorities. There was a camp of Russian exiles, among whom cholera was raging, located on the banks of the Elbe near the city water-works, and the people in the camp were allowed to throw their slops and other filth into the river. It is said that over forty towns in Germany alone have reported cases of cholera imported directly from Hamburg.

Russian Emigrants, it is officially announced, will no longer be permitted to enter Germany.

Directions for Disinfection.—The following circular concerning disinfectants and their use has been prepared by the Health Board for distribution :

1. Roll sulphur (brimstone) for fumigation.

2. Copperas Solution.—This solution is made by dissolving copperas (sulphate of iron) in water in the proportion of one and a half pound to the gallon, and is used for disinfecting cellars, drains, sewers, areas, alleys, etc.

3. Zinc Solution.—This solution is made by dissolving four ounces of sulphate of zinc (white vitriol) and two ounces of common salt together in one gallon of water, and is used for disinfecting clothing, bed-linen, etc.

4. Corrosive Sublimate Solution.—This solution is made by dissolving eight grains of corrosive sublimate (bichloride of mercury) in a pint of water, and is used for disinfecting the discharges from persons sick with cholera and other diseases. As this solution is a dangerous poison, it should be prepared and used under the direction of a physician or chemist.

5. Chloride of Lime Solution.—Dissolve chloride of lime of the best quality in soft water, in the proportion of four ounces to the gallon. Use one pint of this solution for the disinfection of each discharge in cholera and typhoid fever. Leave the disinfectant in the vessel for at least fifteen minutes before throwing it into the vault or closet.

6. Premises.—Cellars, yards, stables, gutters, cesspools, closets, drains, sewers, etc., should be frequently and liberally treated with copperas solution. The copperas solution is easily prepared by hanging a basket or bag containing about sixty pounds of copperas in a barrel of water.

7. In the Sick-room.—The most available agents are fresh air and cleanliness. The clothing, towels, bed-linen, etc., should, on removal from the patient and before they are taken from the room, be placed in a pail or tub of the zinc solution, boiling hot, if possible.

All discharges should either be received in vessels containing corrosive sublimate or chloride of lime solution, or, when this is impracticable, should be immediately covered with such solution. All vessels used about the patient should be cleansed with the same solution. Unnecessary furniture, especially that which is stuffed, carpets, and hangings, should, when possible, be removed from the room at the outset ; otherwise they should remain for subsequent fumigation and treatment.

8. Fumigation with sulphur is the most practicable method for disinfecting the house. For this purpose, the rooms to be disinfected must be vacated. Heavy clothing, blankets, bedding, and other articles which cannot be treated with zinc solution should be opened and exposed during fumigation, as directed below. Close the rooms as tightly as possible, place the sulphur in iron pans supported upon bricks placed in washtubs containing a little water, set it on fire by hot coals or with the aid of a spoonful of alcohol, and allow the room to remain closed for twenty-four hours. For a room about ten feet square, at least two pounds of sulphur should be used ; for larger rooms, proportionally increased quantities.

9. Body and Bedclothing, etc.—It is best to burn all articles which have been in contact with persons sick with contagious or infectious diseases. Articles too valuable to be destroyed should be treated as follows : Cotton, linen, flannels, blankets, etc., should be treated with the boiling-hot zinc solution. Introduce piece by piece, secure thorough wetting, and boil for at least half an hour. Heavy woollen clothing, silks, furs, stuffed bed-covers, beds, and other articles which cannot be treated with the zinc solution should be hung in the room during fumigation, their surfaces thoroughly exposed, and pockets turned inside out. Afterward they should be hung in the open air, beaten and shaken. Pillows, beds, stuffed mattresses. upholstered furniture, etc., may be cut open, the contents spread out and thoroughly fumigated. Carpets are best fumigated on the floor, but should afterward be removed to the open air and thoroughly beaten.

The Floating Hospital of St. John's Guild has been turned over to the Board of Health to be used as a hospital for cholera patients, in case the disease appears in New York.

Salol is one of the multitude of drugs recommended as specifics in cholera. Dr. Löwenthal, writing in the *Deutsche Medicinische Wochenschrift*, recommends its use

very highly. He says the remedy was employed recently in the Philippine Islands, with the result that there were only three deaths in fifty-three cases.

A Potent Sanitarian.—The Ameer of Bokhara had ordered a cleansing of the city, but hearing that there was a revolt against this order on the part of the dirt-loving inhabitants, his Highness at once commanded the execution of every subject who did not carry out the new sanitary regulations within a week. A reasonably civilized modicum of this vigor in American cities would tend not to destroy men's lives, but to save them.—*Sanitary Era.*

"**Boil Your Ice**" is the advice given by Dr. Daremberg to the Parisians in view of the threatened invasion of cholera. The advice is not bad when it is remembered that one source of the artificial ice-supply of Paris is a pond supplied with Seine water, after it has been polluted with sewage, and which is not distilled before being frozen.

Visitors to the "People's Baths."—A year ago we described the new bath-houses known as the "People's Baths," erected in Centre Market Place by the "New York Association for Improving the Condition of the Poor." The matter was somewhat of an experiment, as it was not known whether the people in that neighborhood would avail themselves of the bathing facilities afforded there. It is very satisfactory to learn that the institution has been a success, as is shown by a report for the year ending August 16, 1892. The number of baths taken in that time was 61,226. Of this number of bathers there were 40,455 men, 7,575 women, 6,203 boys, 2,043 girls, and 4,950 small children. In all cases except those of small children there is a charge of five cents for each bath, and with this is given a piece of soap and the use of a towel. The receipts for the year from this source were $2,813.80.

Southern Surgical and Gynecological Association.—The annual meeting of this Association, which was to have been held November 8th, 9th, and 10th, has been postponed to the 15th, 16th, and 17th of the same month. It was thought wise to change the time of meeting because of the presidential election, which will take place on November 8th.

Dr. Georg Hermann von Meyer, formerly Professor of Anatomy in the University of Zürich, died in his native city of Frankfort-on-the-Main a few weeks ago. He was seventy-seven years old.

A Post-graduate Course for Nurses.—The managers of the New York Cancer Hospital, desiring to give nurses who graduate from small hospitals the advantage of a larger experience in surgical work, have established a post-graduate course of one year. Graduates in good standing may enter at any time. At the conclusion of their term of service a certificate, signed by the governors of the hospital and the attending surgeons, will be given, provided that their work has been satisfactory. Lectures by the attending staff and superintendent will be given, and each nurse will have an opportunity to witness operations, and be given a term of service in the operating-room. Further information concerning the course of study and requirements may be obtained by addressing the Superintendent, Anna M. Lawson, 106th Street and Central Park West. Surgeons and others desiring the services of trained nurses may obtain them by addressing the Superintendent in person or by letter.

The "Ontario Medical Journal" is the name of a new medical monthly published in Toronto, under the editorial charge of Dr. Orr. It is to be the official organ of the "College of Physicians and Surgeons of Ontario" (a society of physicians in the Province of Ontario), and will publish the transactions of that society.

The Canadian Medical Association will hold its twenty fifth annual meeting at Ottawa, on September 21, 22, and 23, 1892.

Dr. D. S. Lyon, of Winnemissett, Fla., was shot and fatally wounded on August 30th by deputy sheriffs, whom he fired upon when they attempted to arrest him for shooting his wife and daughter. He is supposed to have been temporarily insane. He was fifty-three years of age, a graduate of Yale College, and had studied medicine at the University of Virginia and in Berlin.

Professor v. Krafft-Ebing has been nominated by the Medical Faculty of the University of Vienna for the chair of psychiatry, left vacant by the death of Professor Meynert.

Professor Henoch, of Berlin, received the order of the Red Eagle, Second Class, from the German Emperor, and the commandership of the Norwegian order of St. Olaf, First Class, from the King of Sweden and Norway, on the occasion of his jubilee as a Doctor of Medicine.

Dr. Enoch Chase died in Milwaukee a few days ago, at the age of eighty-three years. He is said to have been the first physician in Milwaukee, having settled fifty-seven years ago on the site where the city was afterward built.

The Way it Comes.—The *St. James' Gazette* of August 29th, commenting on the cholera, says: "If we continue to allow foreigners to settle in our midst, we will have frequent epidemics." If the foreigners that "settle in our midst" are comma bacilli, there is no doubt that cholera will follow, and we can but admire the logical discernment of our grammatical contemporary.

A Bichloride Libel Suit.—Mr. Keeley, of bichloride of gold fame, has met with a want of appreciation in England, and has so far lost his temper in consequence as to bring a suit for libel against the *Lancet* and the *Medical Press and Circular*. The latter welcomes the action, which, it says, "will afford us an opportunity of calling public attention to what we firmly believe to be an attempt to delude the victims of an unfortunate and degrading habit into filling the coffers of an enterprising syndicate."

Dr. Ludwig Bandl, formerly Professor of Gynecology at the University of Vienna, died on September 2d at the Doebling Insane Asylum. In 1887 Dr. Bandl was transferred from Vienna to Prague, but broke down at his first lecture in the latter university, and was soon thereafter removed to the asylum where he died.

A Case of Death from Chloroform occurred not long ago in Liverpool. The patient was a woman aged thirty-four, who was advised to take chloroform before having some teeth extracted. She had inhaled less than thirty drops when her pulse became weak, and she had an epileptic fit and died.

Reviews and Notices of Books.

A New Pronouncing Dictionary of Medicine: Being a Voluminous and Exhaustive Handbook of Medical and Scientific Terminology, with Phonetic Pronunciation, Accentuation, Etymology, etc. By John M. Keating, M.D., LL.D., Fellow of the College of Physicians of Philadelphia; Vice-President of the American Pædiatric Society; Ex-President of the Association of Life-Insurance Medical Directors; formerly Visiting Obstetrician to the Philadelphia Hospital (Blockley), and Lecturer on the Diseases of Women and Children; Consulting Physician for the Diseases of Women, St. Agnes' Hospital, Philadelphia; Gynecologist to St. Joseph's Hospital, Philadelphia; Editor of "Cyclopædia of the Diseases of Children," etc.; and Henry Hamilton, Author of "A New Translation of Virgil's Æneid into English Rhyme;" and co-author of "Saunders's Medical Lexicon," etc. With the collaboration of J. Chalmers Da Costa, M.D., and Frederick A. Packard, M.D. With an Appendix Containing Important Tables of Bacilli, Micrococci, Leucomaïnes, Ptomaïnes; Drugs and Materials Used in Antiseptic Surgery; Poisons and their Antidotes; Weights and Measures: Thermometric Scales; New Officinal and Unofficinal Drugs, etc., etc. Philadelphia: W. B. Saunders. 1892.

A new medical dictionary at this day, in order to have any *raison d'être*, must, in default of general perfection, have at least one special point of excellence wherein it surpasses all its numerous rivals already in the field. The compilers of the present work seem to have recognized this necessity, and to have selected orthoepy as the distinguishing feature of the book and the one which, through its undeniable excellence, should stamp the lexicon at once as an authority. This conclusion is forced upon us by the title of the book, by the fact that the preface is devoted entirely to a consideration of the rules of pronunciation, and by the claim there made that the book is "a pronouncing dictionary in the true sense of the word." We are led, therefore, to examine this feature first, in order to see how far the claim to accuracy and authoritativeness is sustained by the work itself. Unfortunately, we have not long to search before finding that the book is full of errors. In the preface (p. 11) we find four words wrongly accented in one line. These are, of course, errors due to careless proof-reading, but careless proof-reading in a lexicographer is as reprehensible as ignorance, for the reader cannot be supposed to distinguish between printers' errors and authors' blunders, and is misled as readily by the one as by the other. Other evident proof-errors are "ahcroödextrin," on p. 33, "cadmi'i," on p. 187, "horedeum," on p. 370, and "taraxa'cum," on p. 672. A few of the other words which we have found mispronounced (all of them can hardly be proof errors) are anæmic, diabetic, hydramides, paresis, phenic, tinnitus, umbilicus, unipolar, urethan, and all the French words with scarcely an exception. In the case of many words, the pronunciation of which is doubtful, we find no signs whatever to indicate their orthoepy, while in other simple English words such as acid, beak, croup, fossil, idiocy, scab, scald, toxic, typical, ulcer, wrist, the pronunciation is marked with absurd precision. Sometimes in a single word we find everything made clear except the one point on which there may be doubt. For example, on p. 583 we see the word "primi'tiæ," with the accent indicated as well as the quantity of each *i* carefully marked, but we are left to choose between ā, ī, and ē as the pronunciation of the diphthong, and between t, s, sh, and ts, as that of the *t*. Then again, the same word is marked differently as it appears in different places. Thus we find "chlor'ĭdum," on p. 134, "chlo'ridum," on p. 641, and "chloridum," on p. 735. Under "diabetes mellitus" we are left entirely in the dark as to the pronunciation of the second word, although it is one that is almost always wrongly accented by medical speakers.

The authors are not more happy in their definitions than in their orthoepy, as the following, taken at random, will show.

Articulo Mortis (Lat.). At the critical moment of death; applied to one who is moribund or at the point of dying.

Bromelia Ananas. Ananas; a West Indian tree (*sic*), bearing a familiar fruit, the pine-apple.

Pledget. A compress or small tent or lint-roll.

Hydræmia. Spanhæmia. Applied to an increased proportion of water in the blood. In another part of the book the word spanæmia is spelled correctly without the *h*.

Many important words are omitted, at least we have been unable to find them in their proper alphabetical places. Among these are arthrectomy, bow-legs, cascara sagrada, Glover's suture, gullet, head, ischias, lovage, and iodide of potassium. Under "Solution," we find Goad by's, Lugol's, Monsel's, Müller's, and others, but look in vain for Donovan's, Fehling's, Fowler's, Javelle's, Magendie's, Vlemingkx's, etc. Donovan's, Fehling's and Fowler's, we find elsewhere, but the others are wanting entirely.

But it is needless to search for any more faults in this dictionary. We have found enough, and they are glaring ones, to convince us that the work is not one that can be commended. Before and above all things, a dictionary maker must be accurate, painstaking, and plodding, and he must, moreover, have some knowledge of lexicography. We have failed to find evidences of any of these necessary qualities in the work before us.

There is an appendix. This may be good, but we have not had the courage to examine it.

Cure Radicale des Hernies. Avec une Étude Statistique de 275 Opérations et 50 Figures Intercalées dans le Texte. Par le Dr. Just Lucas-Championnière, Chirurgien de l'Hôpital Saint-Louis, Membre de la Société de Chirurgie, Président de la Société d'Obstétrique et de Gynécologie. Paris: Rueff & Cie. 1892.

The author of this work has written much, at one time and another, upon the subject of the radical cure of hernia, and has now collected in one large book these writings, and made of them a connected treatise. His method is to resect the hernial sac as high up as possible, in order to obliterate as nearly as may be the infundibuliform depression at the internal ring. This done, the tendency to rupture at this point is greatly lessened, if not removed entirely. Originally proposed for inguinal hernia, the method has been extended to femoral and umbilical herniæ as well. The author believes in the efficacy of his own operation, and does not waste any time or space in describing the methods of others. The work is not, therefore, a general treatise on the radical treatment of hernias, but is simply an exposition of Dr. Championnière's individual views and practice. The personal character thus imparted to it enhances in no small degree the pleasure of the reader.

Bacteriological Diagnosis: Tabular Aids for Use in Practical Work. By James Eisenberg, Ph.D., M.D., Vienna. Translated and augmented, with the permission of the Author, from the Second German Edition. By Norval H. Pierce, M.D. Philadelphia and London: The F. A. Davis Co. 1892.

This is undoubtedly a welcome work of its kind, being so practically arranged that its place will be found in every laboratory. It will also save time, for every investigator will have at a glance, alphabetically arranged, just those points most necessary for his bacteriological diagnosis. The translation will be of service to our American bacteriologists, and also to scholars.

Society Reports.

BRITISH MEDICAL ASSOCIATION.

Sixtieth Annual Meeting, held at Nottingham, July 26, 27, 28, and 29, 1892.

SECTION OF MEDICINE.

FIRST DAY, WEDNESDAY, JULY 27TH.

Diseases of Plants.—DR. W. H. RANSOM, President of the Section, selected as the subject of his opening address "Some Diseases of Plants Compared with Those of Men." Inflammation in plants might, he said, have been the title of his paper, as it would deal almost solely with that process which, as he defined it provisionally, might be considered as the reaction of living cells to irritation. All such reactions in plants produced what were called galls, using the word widely, but some of them which occurred in growing points were known as witch-knots. It might be convenient to add that a gall should be considered as a local hyperplasia, or overgrowth of tissue, which differed from a local hypertrophy in that it diverged in structure and form from the normal tissue or organ with which it was related, and injured, or at least did not benefit, the plant. The irritation giving rise to galls might be mechanical, possibly; but, as a matter of fact, it was almost invariably found to reside in the secretions of some insect. In all instances local hyperplasiæ ensued, with modification of structure and form, and in each there was such a definite relation of the process to the irritant that the evolution of the gall was mainly directed by it, and the product was therefore specific. In the case of galls due to insects, the insect which laid the egg was usually spoken of as the cause of the gall; but, to speak accurately, it was only constantly associated with that cause, which directly inhered in the developing embryo in ovo, or in the young free larva. Some organisms, such as fungi, made no wound when they caused galls. The irritant was probably an organic chemical substance producing persistent disturbance of the metabolism of the living cells. The power of reaction to irritation resided in all the living cells, although most marked in the younger. Repair was not specific in relation to the cause of the injury, but in similar tissues was always the same. Those who accepted the view of inflammation would consider all inflammations specific, even when the phenomenon ascertained did not suffice to prove them to be so. From the purely clinical standpoint many inflammations would still be spoken of as simple or common; but, with the progress of etiological knowledge, the number of specific inflammations would increase at the expense of those which, from lack of knowledge, were called common. Something, he thought, would be gained to the science of pathology by its closer association with etiology, and then classification of diseases would be improved by an increase in the number of specific maladies.

Peripheral Neuritis.—DR. I. S. BRISTOWE, of London, opened a discussion upon this subject. He considered that it was now generally accepted that nervous disturbance was a cause of several diseases. Some poisor, developed either within or without the system, often caused such diseases of the nerves. Alcoholic peripheral neuritis was the best marked of all the forms of neuritis. He cited three cases. A lady, with ascites and cirrhosis, had mental symptoms at first, and then became numb on the fingers and toes. She got well. In the second case, a lady died with evident symptoms of peripheral neuritis. There was probably in her case paresis of the diaphragm. In the case of a man, aged thirty-three, who had been in the Indian army and was a great drinker, the power of reading the papers was lost, and the patient had tingling and numbness in the hands and toes. He had bilateral facial paralysis, could not smile, and had difficulty in swallowing. The pupils were equal, and reacted well to light. The muscles of the upper and lower extremities were weak. There was neither albumin nor sugar in his urine. The next group of cases he styled "hysterical neuritis." In the case of one woman there were attacks about twice yearly. There was tenderness in the fingers. She was stout and healthy looking. There was swelling and redness over the left forearm, and the limb felt cold. She was treated with arsenic and the continuous current. The arm was placed in a bath at blood heat, which was very successful treatment. She again returned to the hospital for the same affection. There was some slight wasting of the muscles of the forearm. In the case of another girl, aged twenty, there was swelling of both hands. A third case was that of a young lady of a highly neurotic stock, who lost the use of her lower extremities. The muscles of the forearm and hands were tender, and there was great anæsthesia of the lower limbs below the knees. She would have fallen if she closed her eyes. There was but little urine passed, about a pint in the twenty four hours. A lady, aged forty, took by mistake a lotion containing belladonna and opium. Neuritis of the arms developed after her poisoning, which had threatened to prove fatal. Here, then, were three classes of cases—alcoholic, hysterical, and a third kind of case, viz., one caused by the action of poison suddenly. He had merely given a few cases to show what had come before his own observation in certain well-defined circumstances.

DR. BYROM BRAMWELL said that perhaps no subject had for the last ten years led to greater discussion than this of neuritis. The most common form, alcoholic, was perhaps at present well made out. Hysterical neuritis was a new term. A complete recovery often took place. He had seen a number of cases which were rapidly cured, one of them being in a lady over eighty years of age. In some cases, however, the patient had died either of the disease or of some other complication. The toxic poisons which produced this neuritis were curious and were numerous.

DR. HANDFORD related a case of peripheral neuritis occurring in acute rheumatism. A girl of twenty years of age, with acute rheumatism, with profuse acrid sweats, had considerable swelling of both arms, there was loss of sensation in the left hand, which remained for some months. There was wasting of the muscles of the thumb and little finger. In another case there was pigmentation of the skin, and in another there was syphilis and alcoholic poisoning and sclerosis of the cord.

DR. PRYCE referred to neuritis occurring in diabetes. He knew of only two cases having been published of this form of neuritis. There was ataxia in some of these diabetic cases. In the case of a man, fifty-six years of age, with diabetes, with an alcoholic history, there was a perforating ulcer of the foot. The nerves of the leg were found by Dr. Byrom Bramwell to be much diseased. In another case, in a man aged sixty-two years, with diabetes and gangrene of the legs, there was no parallelism between the amount of sugar and the severity of the symptoms. In another case there was diabetes, ataxia, and gangrene. All of these cases were fatal.

DR. NEAL, of Nottingham, showed a patient with rheumatic neuritis, who had been ill for a year, and who exhibited great wasting of the muscles of the upper and lower extremities. He was now much better than he had been, and hence he thought the case was one of alcoholic neuritis, and not of progressive muscular atrophy.

DR. C. K. DRYSDALE, of London, said that in his experience there were several causes of peripheral neuritis, among which might be placed alcohol, syphilis, gout, rheumatism, diphtheria, phthisis, and leprosy. As to alcoholic neuritis, it had happened to himself to see more cases of the affection in men than in women, although the contrary opinion had been entertained by some authors. Alcoholic neuritis was often easily cured in a few months, if the patient could be kept without alcohol in a hospital. Hyperæsthesia and anæsthesia were often

well-marked in this form of neuritis, and the muscles of the upper and lower extremities became wasted and very tender when pressed. Syphilitic neuritis was often seen in young women with secondary syphilis, who exhibited anæsthesia over large areas of the body. Lead and copper poisoning and rheumatism were all well-marked causes of neuritis.

Dr. F. Taylor said that it was remarkable what a number of causes might be given for neuritis, some of which had been mentioned in the discussion. He asked whether exposure to cold might not, *per se*, be looked upon as a cause of the disease. In one case he had seen such had been the only explanation of the facial affection and other symptoms of peripheral neuritis. He meant to refer to the effect of cold, and not to allude to the possible existence of a rheumatic poison in the system. The patient he had described recovered completely. Although he admitted, with previous speakers, that many of the slighter cases of alcoholic neuritis quickly recovered, it must be confessed also that in other cases the disease was a very severe affair. Thus, in the case of a barmaid, which he had published, the patient developed great rigidity of the limbs, which continued in spite of treatment, and which eventually put an end to her existence. As to the comparative frequency of peripheral neuritis in men and women, he could not express any opinion. At all events, the affection was very frequently met with among males, and would doubtless be more frequently described now that the symptoms had been so well made out.

Dr. Pope, of Leicester, said that the case shown by Dr. Neal had a great resemblance to progressive muscular atrophy; but, as the patient had recovered greatly, and as there was absence of knee-jerk, he was inclined to look upon the case as one of multiple peripheral neuritis. The patient had had a relapse lately.

Dr. Freeland asked whether hyperæsthesia was common in alcoholic neuritis. Some patients he had seen suffered terribly, and the muscles of the calf were extremely sensitive.

Dr. Septimus Gibbon mentioned that he himself had had neuritis after a fall from a horse.

The President said we should speak of neuritis as a group of diseases.

Dr. Bristowe looked on hysteria as not connected with the higher nerve-centres only, for there were hysterical hip-joints and also hysterical peritonitis. Neuritis was curable in a very great number of cases. Sometimes patients with alcoholic neuritis remained affected for a year or longer. An alcoholic patient was much more likely to take neuritis from exposure to cold than others. He had no idea whether neuritis was commoner in men or in women. Syphilis was undoubtedly a common cause, and also exposure to cold. Sometimes there was no apparent cause. He looked upon hyperæsthesia as a very common symptom in neuritis, and tenderness of the muscles on pressure was a frequent symptom of this affection.

Second Day, Thursday, July 28th.

Ascites.—Dr. Cheadle, of London, opened a discussion on this subject. He said that, in the vast majority of cases, ascites was due to alcoholic cirrhosis or to syphilitic disease of the liver. Dr. Murchison had given a very bad prognosis in cases of cirrhosis. Dr. Fagge also gave a most gloomy prognosis. Dr. F. Roberts regarded cirrhosis as sometimes curable. Until 1884 the speaker had never seen a case recover. In spite of, and, perhaps, sometimes in consequence of, treatment, patients used to go on from bad to worse.' Thirty-six cases were spoken of in 1886, where recovery, more or less, took place. In 1884 he had a bad case of cirrhosis with much ascites. The patient recovered under frequent tappings and the administration of iodide of potassium. This case was syphilitic. Since that time he had quite altered his practice, and had had twenty-two cases of recovery. The cases did far better now than formerly. In all the cases where the patients quite recovered, the liver was large. When it is contracted there is very little hope. If only the liver remained of moderate size there was some hope, however much emaciation there might exist.

There was a distinction in the microscopic appearances between enlarged and contracted liver. The hypertrophic cases he thought would turn out to be syphilitic. In a case he had recently in St. Mary's Hospital, a man had hard liver and was getting quite well under large doses of iodide of potassium. There was a close connection between alcohol and syphilis. The alcoholic cases sometimes recovered. We might conclude that both alcoholic and syphilitic livers might be cured. So long as there was sufficient liver tissue remaining the patient might recover. As to treatment, abstention from alcohol should be strictly recommended. Good food and iron were useful. As to the mode of removal of the fluid, there was even now a dreary uniformity in books in the treatment. Diuretics, purges, and mercury were used. There had not yet been any change in the practice. Hydragogic purges, however, were most dangerous to the patient. As to diuretics, they were of very little use. Rosin of copaiba had been extolled; but he had been singularly unfortunate in his use of diuretics in all forms in the treatment of ascites.

Paracentesis was the only useful remedy. This was a most common sense procedure, and it was strange that it was not more used. It was the weight of authority contained in text-books doubtless that kept the old practice up. All the intestines suffered by the pressure from ascitic fluid. The fluid which did so much harm should be removed as early as possible. The operation was perfectly free from risk in almost all cases. If the patient were in anything like ordinary strength, there was no danger. Continuous drainage had been used in ascites. Repeated tappings were very useful, and only required ordinary care in attending to the purity of the instruments. Potassium iodide should be given in all cases, as in many syphilis existed. In ascites due to heart disease paracentesis was often useful. In tubercular peritonitis the effusion was not usually great, and did not often require tapping. Abdominal section was admirable in some instances.

Dr. Schroeter said that he agreed with Dr. Cheadle in his opinion that purges were of no use; but, as to diuretics, he could not quite agree. Calomel was of service, as also some other diuretics. He also argued that it was not well to wait too long before tapping He had himself treated sixty-nine cases of ascites, which were cured. He would begin the treatment with diuretine (theobromine-natro-salicylicum).

Professor Semmola, of Naples, said that the treatment and curability of ascites had in latter days been amply discussed. Twenty-four cases had been presented by him at the Congress of Amsterdam, thirteen years ago, cured simply by milk treatment. When a case of ascites occurred, it was not necessary to have recourse to tapping, or indeed to any drug treatment. There were a certain large number of cases where milk treatment succeeded in rapidly and completely removing the ascites. It was indicated in the early period of interstitial hepatitis. It used to be thought that ascites connected with cirrhosis was quite incurable, but this was an error. The speaker had recently published a work on this treatment, and Dr. Charcot had lately admitted the curability of cirrhosis in the early period. In mechanical obstruction the cases would prove fatal under drugs or under the milk treatment. Milk and iodide of potassium were the true remedies in curable cirrhosis.

Dr. West said that in severe cirrhosis of the liver a cure could not be expected. Free purgation was certainly hurtful. Diuretics sometimes were of service; at other times they were of no use at all. Especially was this true in great effusions in ascites. In chronic ascites

there might be a pressure of twenty millimetres of mercury in the abdomen. When ascites was cured, a collateral circulation always occurred in the abdomen. The treatment of ascites by rest was a very essential part of the principle. Another very important point was to see that the patient cut off the use of alcohol. If patients with cirrhosis were carefully treated, they might live a very long time. It was probable that large livers sometimes became small and atrophied. Hypertrophic cirrhosis was undoubtedly very rare in this country. Continuous drainage was not dangerous, in his experience, in the treatment of ascites.

Dr. S. Bristowe said he had read a paper about twenty years ago on this disease. He was still in favor of diuretics, in a very great proportion of cases. In many instances the cirrhosis of the liver seemed to improve. Rest in bed and tonics were the main points in treating ascites. The speaker was not in favor of opening the abdomen in tuberculous peritonitis. He confessed he could not remember any case where a big liver had become smaller.

Dr. Ratcliff presented some conclusions arrived at by himself and Dr. Wilson on the most frequent methods of collateral circulation. In books it was stated that the external abdominal and hæmorrhoidal veins carried on the circulation; but, in reality, he and Dr. Wilson found that there were many other routes taken by the blood. In very many cases the veins of the œsophagus were enlarged, and by this route the vein of the supra-renal capsule of the other side was reached. This gave great relief to the patient in many cases of ascites.

Another route was through the coronary vein of the stomach, which became greatly enlarged. The hæmorrhoidal route was, they found, the least frequently taken of all. Sappy's vein was sometimes very much enlarged. The external abdominal veins played an unimportant part. All cases of recovery from ascites must be accompanied by enlargement of such veins, and the stomach route was the most important of all.

Dr. Wilson remarked that the œsophageal route was the most dangerous of all which the collateral circulation could adopt, since in this case hæmatemesis was to be dreaded from the bursting of the large veins at the coronary end of the stomach.

Dr. Tooth said that many cases of ascites occurred in his experience for which no cause could be discovered.

Dr. Tyson said that the late Sir W. Gull had formerly recommended bitartrate of potash as a very useful remedy in ascites, and he had found it useful, as also iodide of potassium.

Dr. Drysdale of London, agreed that drastic purges were very bad in ascites, and that diuretics were of very little use. He relied almost entirely on warmth, rest, and frequent tappings; and that, with total abstention from alcohol, cured many cases of early cirrhosis.

Dr Cheadle, in closing, said that he was forced to conclude that there had been a remarkable agreement come to on the points concerning which he had spoken. He had not tried diuretine. Many cases of tubercular peritonitis doubtless recovered by rest and warmth. As to Dr. Tooth's cases, he thought these must be rarely met with, as the cause of ascites was usually discoverable.

Ice in Pericarditis.—Dr. Lees read a paper on the treatment of pericarditis by ice-bags. The great majority of cases, he said, of pericarditis arising in Bright's disease were fatal. Statistics would show that the heart was dilated and subsequently dropsy supervened. Forty years ago, venesection and mercury and opium were used. Nowadays a small blister or the application of a few leeches was all that was left. Many physicians did scarcely anything, and even less, for they withdrew salicylates in pericarditis. Some German physicians had tried the use of ice in such cases. In 1889 he had used ice-bags in pneumonia. In 1890 he tried ice in rheumatic pericarditis. In that case the pulse was 140, and respiration 60. He put a large ice-bag over the heart for twenty-four hours. This gave relief, and the pulse fell to 104. The salicine given was lessened in amount. In that case the ice did no harm. In a second case there was no rheumatism; but ice did much good, continued for four days. This patient had empyema of the right side, and died of this disease.

Tuberculous Broncho-pneumonia.—Dr. Gordon read a paper on this subject. He mentioned the case of a child who, shortly after an attack of measles, acquired a cough and became greatly emaciated. The pulse was 140, and diarrhœa was frequent. The diagnosis was broncho-pneumonia. This child died, and there was no tuberculosis apparent. There was no breaking down of the lung tissue. The lungs were hardened and examined, and he found in the cells thickening of the walls of the alveoli. This, then, was doubtless a case of acute tuberculosis, which assumed the form of acute catarrhal pneumonia in children.

Venesection.—Dr. West read a paper on blood-letting. The author said that free bleeding had been abandoned, and with great justice; but in some cases it was useful within moderate limits. Hemorrhage within the skull and in the lungs was usually fatal, and bleeding for hæmophyses must always be of doubtful utility. It used to be the practice to bleed in such cases. A patient, aged fifty-four, had fits of unilateral character and on the left side. Dr. West bled him to the extent of thirty ounces, and the patient was relieved. The severe fits gradually ceased. A man, aged forty-two, had sudden and unilateral fits, probably due to unilateral hemorrhage. He was bled and the fits ceased. In another group of cases the object was to afford relief to weakened vessels. A man who had suffocative catarrh was much relieved by venesection. In some cases of morbus cordis he had also found bleeding of service, for instance, when the right ventricle was enlarged. In pneumonia, bleeding used to be the routine treatment; and that was exploded; but the cases of pneumonia in which bleeding was useful were those where there was no great asthenia of the heart. Such cases were rare. In uræmia, bleeding had been recommended in order to get rid of poisoned blood; but the speaker had never seen any advantage from this practice.

Phthisis in Egypt.—Dr. Sandwith, of Cairo, read a paper on phthisis in that city. He spoke of four hundred cases of phthisis seen by himself, and the number of cases of improvement spoke well for the climate of Egypt. For early cases of phthisis Egypt was an excellent climate. One-fourth of the patients in a general hospital in Cairo were tuberculous. There were, however, many negroes among these patients. Phthisis was rare in the Soudan, which was a dry climate for the English; but for negroes it was a damp climate. The tubercle found in black patients was extremely infective in its character. Ulceration of the intestines was very common in the tubercular patients in Cairo. Altogether he considered the climate of Egypt as one likely to prove more serviceable to English patients in the early stages of consumption. In the later periods of the disease, he thought that consumptive patients were more likely to do well at home, and he narrated several cases where patients with large cavities had come to Egypt under the care of a medical practitioner, and who had speedily succumbed after the fatigues of the journey. It was to be hoped that they came of their own accord in such cases, and that they were not sent to die by medical advice. The climate was a most enjoyable one in winter.

Third Day, Friday, July 29th.

Treatment of Heart Disease.—Dr. Semmola, of Naples, read a paper on this subject. The author said that the results obtained by experiments on animals were of but little use in the treatment of heart disease. The most important indication in the treatment of such diseases was to be looked for in the etiology of each indi-

vidual case. The physicians attempted in valvular diseases of the heart to regularize the rhythm by means of tonics and digitalis; and in many such cases the influence of therapeutic remedies was extremely powerful, sometimes quite miraculous. But in other cases it was not the valves alone, but the whole heart that was diseased; and these constituted the most deplorable cases the physicians had to treat in practice. In such cases as these no light was obtainable, even from the best devised experiments on the lower animals. Such patients unfortunately almost always succumbed to the heart affection. What were the bio-chemical conditions of such cases? In the first place, all dyscrasias might affect the muscle of the heart as they did other tissues of the body. In one case he had met with, a man had dropsy and several other very severe symptoms of heart disease. He found that he had formerly suffered from syphilis, and consequently he treated him with specific remedies, and in four weeks the patient was restored to health. In some syphilitic patients with similar symptoms such treatment did not succeed; and in such cases the speaker was in the habit of making a microscopic examination of the patient's blood, to ascertain the amount of blood-corpuscles in it. He had had seven cases of heart disease which had been cured by this specific treatment. Myocarditis, when syphilitic in its causation, might often be cured.

Dr. Drysdale, of London, mentioned the case of a distinguished medical man, since deceased, who had myocarditis of the nature of the cases mentioned by Professor Semmola, and was benefited by iodide of potassium.

Sir F. Bateman, of Norwich, said he could corroborate the view that myocarditis was sometimes due to syphilis. He complimented Professor Semmola on the way in which he had worked out the history of such cases.

Dr. J. Lavies said he was not quite able to agree with Professor Semmola that experiments on animals were useless in heart disease. He had tried the treatment by specifics in some cases of myocarditis, but he must say with little benefit in most cases. Nowadays diet and exercise were more used than drugs in the treatment of most cases of heart disease. He doubted whether in obscure cases it would be of service to use such heroic treatment of myocarditis as that favored by the author of the paper.

Gout.—Dr. Emil Pfeiffer, of Wiesbaden, read a paper on uric acid secretion in gout. He observed that the process for ascertaining the correct amount of uric acid in urine was now greatly improved. In gouty persons he found that there was diminution in excretion of uric acid while the attacks were acute; but in chronic gout the excretion was increased. Also, in disease of the kidney he had found increased excretion of uric acid, and this was quite contrary to Dr. Garrod's assertion. The hydrochloric acid process was not quite accurate enough. The observation of Garrod had made it be supposed that retention of uric acid was the cause of the symptoms of uræmia, but the result of his own numerous experiments with this more accurate method of examination for uric acid showed that this was not correct.

Perimeter Measurements in the Diagnosis of Local Brain Disease.—Dr. Byrom Bramwell, of Edinburgh, read a paper on the value of these measurements. The value of the perimeter in such cases was as yet not recognized by physicians. Dr. H. Jackson's advice, to examine carefully for optic neuritis, was not attended to for a long time after it was given. Everyone knew the great difficulty of interpreting experiments, even on monkeys, and this made the careful physician by far the best interpreter of physiological changes in the brain. At the tip of the occipital lobe in man there was probably a visual centre, any lesion of which caused hæmianopsia as its commonest symptom. There was also in such cases hæmiopic pupil. He related the case of a woman, aged fifty five, who had suffered from marked mitral stenosis. Two months previous she had become suddenly unconscious, and had remained in bed for a fortnight without being conscious of her condition. The only symptom observed in her case was homonymous hæmianopsia.

The patient died. The diagnosis made was that she had some disease of the left occipital lobe, and this was correct. There was infarction of the right side of both retinæ observed in this case. After death it was found that there existed a lesion at the tip of the left occipital lobe. This case showed well the great importance of perimetric observations.

An Epidemic of Cholera.—Surgeon-Colonel R. Harvey read a paper on an epidemic of cholera at Srinagar. This was seated in a valley of the Himalayas, and the town was five thousand feet above the level of the sea. In 1843 twenty thousand persons died of cholera. Severe epidemics went on increasing. Cholera germs required a suitable soil. Efficient quarantine for this disease was impossible. The true prevention lay in care for sanitary conditions. The history of cholera in England showed this well. The filth and squalor of the people in Cashmere was quite undescribably terrible. The natives cared nothing for either pure water, air, or for cleanliness. Their courtyards were used for defecation, and were horrible. The water of the river was like that of a common sewer. In 1888 it was that cholera was imported, and once introduced the disease spread like wildfire. In a town of one hundred and twenty-four thousand people there were two hundred and ninety-eight deaths in one day. The mortality in London's last epidemic was about three hundred a week, but as many as that died in a day in Srinagar. The epidemic was most terribly malignant, and sixty-five per cent. of those attacked perished, starvation ensued, for no kind of business was carried on. The advice to drink boiled water was disregarded, as being an interference with Providence. The European community lived in a quarter by themselves. They left the city, much to their own advantage. Cashmere was an independent state, and the European resident had no power. In the fourth week of the epidemic, in 1892, there were one thousand eight hundred and three deaths out of two thousand five hundred and seven cases of cholera He had recommended pure water to be brought into the city by pipes, and this would probably be attended to, since another city of Cashmere had been thus supplied, and thus cholera had been kept away from that city.

Dr. Coghill, of Ventnor, said that when he lived in China he found the filth there to be even worse than it was described to be in Cashmere. He proposed that the recommendations of Dr. Harvey be forwarded to the Council. Surgeon-Major Cornish seconded this resolution, and referred to the coming invasion of cholera. Probably the cholera would arrive in England; but he believed that we might look on with a certain degree of tranquillity, since we had good water and good drainage.

Some Complications and Sequelæ of Infectious Fevers.—Dr. Francis Hawkins read a paper with this title. He cited some French authors who had described endocarditis as occurring in scarlatina. He had lately been trying to study this point to see what was the state of the heart in the exanthemata. To commence with scarlatina, he had never heard a pericardial friction in uncomplicated scarlatina. When the disease was complicated with rheumatism, he had had four cases. After death he had found adherent pericardium and a slight affection of the valves. In 100 uncomplicated cases of scarlatina, in 4 there was a passing murmur heard. Pericarditis had been said frequently to occur in this disease, but of 650 such cases only one was due to scarlet fever. Scarlet fever complicated with nephritis showed occasionally pericarditis. In diphtheria, and in measles also, murmurs were observed, which lasted a short time and disappeared.

Neuroses in Chronic Rheumatoid Arthritis. — Dr. Hugh Lane read a paper on this subject. There were, he said, two affections which were often confounded, viz., rheumatic arthritis and rheumatoid or strumous arthritis. His remarks merely applied to the latter. There was great loss of appetite often noticed in such cases. This mal-assimilation of food caused emaciation. There was rapid pulse, 120 to 150 in some cases, hard in character. There was high tension observed in the sphygmographic tracings. Nervous symptoms were well marked, and might be general or local. In younger persons the history of phthisis was common. Local sweating was noticed in the course of some nerve. There was paralysis of the vaso-motor muscles, as shown by the rapid pulse. Purpuric eruptions were commonly noticed. Muscular atrophy was also frequently observed. The intercostal and temporal muscles wasted. It was not clear why there should be such wasting. The reflexes were not increased in rheumatoid arthritis, as had been said.

Association of Sensory Disorders with Visceral Disease.—Dr. J. Mackenzie read a paper with this title. The author had remarked that pain existed at the umbilicus when there was some disease of the large intestine. A band of anæsthesia extended over the left ribs in the case of disease of the stomach. In the case of retained scybala he noticed there was hyperæsthesia down the buttocks and back of the thighs. In disease of the spinal cord the inside of the right arm and outside of the left arm had been noticed to be painful. In angina pectoris there was noticed pain over the heart and over the outside of the left arm. In diaphragmatic pleurisy the pain was noted in the supra-spinous fossa and on the left ribs, a little above the level of the umbilicus.

SECTION ON PUBLIC HEALTH.

Sir W. Foster, as Chairman of the Section, delivered the customary address.

Factory Operatives and Child-bearing.—Dr. George Reid introduced the subject of legal restraint upon the employment of women in factories shortly before and after childbirth. The speaker had obtained an important series of statistics bearing on the subject. He had found that in districts where women were largely employed in factories, the infant death-rate is greatly in excess of those where they are not so employed, in the proportion of 182 to 158. In those towns where women are most employed, the deaths of children under one year numbered 195 per 1,000, falling to 152 in those where practically no women worked in factories. In other words, twenty-eight per cent. more infants die in one case than in the other. The fact that the mothers return to factory-work a month after confinement, and are thus prevented from suckling their children, explains this excessive mortality, and Dr. Reid suggested that they should be forbidden by the legislature to return to factory-work for three months, so as to give the children a start with the natural food.

Cerebro-spinal Meningitis.—Dr. Monk described an epidemic of cerebro spinal meningitis which had occurred in Shropshire, the origin of which was traced to a school in which nearly all the scholars had, a few weeks previously, been attacked with diarrhœa. After the school had been closed and thorough disinfection carried out, no fresh cases occurred.

Disposal of Town Refuse.—Dr John W. Mason then brought forward the subject of the "Disposal of Town Refuse." He advocated the erection of furnaces in sufficient numbers to cremate at once all the refuse which could not be utilized for manure.

Prevention of Phthisis.—Dr. C. R. Drysdale read a paper on the prevention of phthisis and syphilis. He had been convinced by Villemin's experiments, in 1876, of the contagiousness of phthisis, and held that every fact since accumulated only confirmed the conviction.

He urged upon those who might be sceptical on this point that, in the face of so many facts as have lately been brought forward, it would be far wiser to act upon the hypothesis that phthisis is contagious than to do nothing. A disease which carries off a fourth or a third part of the population of some communities surely deserves more attention from hygienists that it has hitherto obtained. Are there any practicable means by which the contagion of phthisis can be prevented?

The speaker thought that there were. Segregation of patients should, if possible, be carried out. Hospitals for consumption should no longer be constructed in the midst of cities, where so few cures can be expected to be made. They should be built at the seaside, or on the slopes of mountain or hill ranges, wherever these are accessible. Healthy persons should not occupy the same couch with the phthisical, and the sputum of consumptive patients should be destroyed as soon as possible. The walls of their hospitals and the floors should be frequently washed, etc.; there should be no carpet.

With regard to contagium from the lower animals, that cause of phthisis, although not for one moment to be compared in frequency with that derived from human intercourse, is yet of very great importance. All animals used either for the purposes of milk or meat supply should be carefully inspected, and they should at once be destroyed if they exhibit signs of tuberculosis. The food-supply would not be lessened by these methods, which would simply have the effect of causing cattle-dealers to be more alive to their own interests, and therefore more attentive to the hygiene of their animals. There is no need that there should be any tuberculous disease among cattle, which, under good circumstances, remain entirely free from such disease.

Prevention of Syphilis.—The speaker then turned to the question of syphilis, and said that it was very difficult to understand why civilized nations have as yet done so little to prevent this disease. The only reason Dr. Drysdale could assign for this was that it seems to have been thought that syphilis is not like other diseases, but that it is inflicted upon mankind as a punishment for some sin. At the first blush, it would appear that, of all diseases, syphilis is one that should be most easily prevented. It possesses a fixed virus, and is only communicated by contact or by heredity. It never appears *de novo*, and the contamination is rendered more difficult because it is necessary that the virus shall penetrate through a fissure of the mucous membrane or of the skin. Everyone knows that the contagium of syphilis is neither influenced by bad hygienic conditions nor by atmospheric variations, nor again by the nature of the soil or habitations. Danger resides solely in the diseased individual. It is then perfectly clear that, if all persons affected with syphilis could be separated from the rest of the world during their contagious period, the disease would be banished from the community. But, of course, nothing in that direction has ever been tried. The only plan that has met with any favor on the Continent of Europe has been the system of examination and registration, first made use of in Paris.

In 1867, when the question was discussed under the presidency of M. Ricord, Dr. Drysdale stated, and now he repeated, that after having carefully examined the question in London and in Paris, he came to the conclusion that Paris had a greater spread of contagium than London, although the latter city had no such system of examination. The writings of MM. Lecour, Lefort, and Jeannel, have abundantly shown that the French system, in addition to being extremely unfair to all women, is almost useless in preventing syphilis. Belgium has long been renowned for the strict way in which the French system has been carried out, and Professor Crocq and the late M. Vleminck, in company with Professor Thiry, have always been eloquent as to the advantages accruing to the Belgian army from the strict carrying out of the system. On several occasions he (Dr. Drysdale) had to express doubts as to the correctness of the statements of

these gentlemen, and last year Dr. Moeller, in a paper read at Brussels (October 5, 1891), conclusively showed by statistics that in the Belgium garrisons the diminution of venereal diseases was greater in towns not fully under police regulations, than it was in towns under the regulations. It appears that the two garrisons which showed the most considerable diminution in these diseases are those of Beverloo and Diest: the first presenting the enormous diminution of four hundred and twelve per thousand, and the other sixty per thousand. Whereas in Antwerp and other towns under complete police regulation, the diminution was from thirteen to four per thousand. The same fact has been shown in Hindoostan and also in England.

The first practicable measure for preventing the spread of syphilis is fuller instruction in the pathology of the disease, so that medical men may be at once able to recognize it. This teaching has hitherto been neglected; but the post-graduate courses now in fashion should easily remedy that deficiency. When the patient appears before the medical adviser, the latter should consider it as his solemn duty to inform him or her of the nature of the disease and its contagious character, and of the dangers that may arise to other persons from any close relations between them and the patient. The law admits of the prosecution of anyone who, conscious of his own disease, communicates it to another; but unfortunately this law is seldom put in force. All women and men who are known to have spread the contagion, in spite of being warned, should be liable to a period of enforced seclusion or imprisonment, as it is evidently a criminal act wantonly to spread contagion. In cases where syphilis is communicated without the knowledge of the infecting person, an action for damages lies against the person who has given the disease; although such cases rarely come before the courts, except when an accoucheur communicates the disease in the exercise of his art, or when the parents of syphilitic children are occasionally sued for damages by the foster-mother of the infant. As in the case of all other crimes and injuries, the true way of preventing syphilis is by punishing as a felony a criminal action against the health of anyone. One important point to be considered is whether phthisis and syphilis should be placed in the category of notifiable diseases. Sooner or later this will be found necessary. Civilized human beings will not consent much longer to submit to the attacks of such abominable contagions merely for the purpose of covering up the existence of such evils from the gaze of sentimentalists. There are, of course, difficulties in the way; but what is the use of intelligence if it is too supine to struggle against difficulties. Syphilis can and must be stamped out; and phthisis, it is to be hoped, will become far rarer when it is attacked by such preventive measures.

Conditions Under which Foreigners May Practise Medicine in England.—It is stated in the *Lancet* that a memorandum has lately been prepared, by direction of the General Medical Council, showing the conditions under which foreign medical practitioners are allowed to practise in England, as determined by the Medical Acts of 1858 and 1886. Foreign practitioners, though they cannot register or hold appointments, can practise in England without restriction so long as they use no name or title implying their registration. Hospitals established for foreigners may be attended by foreign practitioners entitled to practise in their own country and not engaged in other medical practice. The Act of 1886 goes further. In it provision is made for reciprocity in the recognition of foreign degrees at the instance of the Privy Council, and subject to the approval of them by the Medical Council as furnishing a sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practice of medicine, surgery, and midwifery. The holders of such degrees are entitled to registration in the colonial or foreign register.

Correspondence.

THE HEALTH RESORTS OF THE RIVIERA.

(Continued from p. 229.)

X.—Bordighera and Ospedaletti.

(From our Special Commissioner.)

THE DIFFERENT RIVIERAS—BORDIGHERA A PLACE OF PALMS—ITS ANCIENT ORIGIN—QUIET RURAL LIFE—SITUATION—THE OLD TOWN—THE BORGO, THE MARINA, AND THE STRADA ROMANA—NOT YET POPULOUS, FASHIONABLE, OR EXPENSIVE—SOME CLIMATIC PECULIARITIES—TEMPERATURE—HUMIDITY—WHY BORDIGHERA IS COMPARATIVELY WELL SHELTERED—A NEW WIND, THE LIBECCIO—AN EASTERN MISTRAL—RAINFALL—SUNSHINE—THE DISPOSAL OF WASTE MATTER—VERY HARD WELL-WATER SUPPLIED FOR DRINKING PURPOSES—SATISFACTORY STATE OF HEALTH—ACCOMMODATIONS—OUTDOOR AMUSEMENTS—INDICATIONS AND CONTRA INDICATIONS—OSPEDALETTI THE LEPROSY HOSPITALS OF THE KNIGHTS OF RHODES—THE NEW OSPEDALETTI—A REMARKABLY WELL-SHELTERED SPOT—EXCELLENT DRINKING-WATER—HOT SULPHUR SPRINGS.

Bordighera, March, 1892.

We are in Italy now. But no sudden transition marks the change of territory. In fact, from Nice eastward, and including that lively city, the native population, the character of the old buildings, the look of the land, and the patois dialect of the common people, all point unmistakably to their Italian origin. It has been aptly said that Napoleon made Nice, and her eastern neighbors France, but God had made them Italy. And whether on French or Italian soil, the general features of these Riviera resorts remain the same. What was taken by France from Italy may be some day restored. But the Riviera will always retain its sunshine, and its shores will ever be laved by the waves of the Mediterranean, no matter what political alterations the powers may make in the map of Europe.

It has occurred to me that, having taken certain liberties with the various regions, divisions, or ports of the Riviera, as traditionally classified, arranged, and minutely described, I ought to explain the *raison d'être* of so appalling an American innovation. It is simple enough. I wished to avoid confusion. Accordingly, I bunched all the leading Rivieras, as found in the standard works, and then simply split them in two by taking the Franco-Italian boundary as my dividing line. East of that line you have Italy, hence the Italian or eastern Riviera, and west of it lies France, with the western or French Riviera. For completeness' sake, and because it sounds well, I threw in the Riviera di Ponente and Riviera di Levante, the former being used by the Italians for the littoral east of Genoa, and the latter for the coast to the west of that city, the whole region being spoken of as the Ligurian or Genoese Riviera. Those pedantic sticklers who insist on following in the footsteps of their predecessors may, therefore, continue to revel in an eastern French Riviera, a western ditto, an eastern Italian Riviera, a western ditto, a Riviera di Ponente restricted to the region east of Genoa, and a Riviera di Levante, ending as far west as possible, say at Toulon. Of course, the Rivière occidentale and orientale are merely the French terms for eastern and western Riviera. Now I boldly challenge the European "qualified person" to do better than I have done in this touchy matter, which, I trust, will not embroil the nations into serious disputes. It has always seemed to me a dazzling imposition that American citizens should have no other voice in European affairs than that small still cry of painful discomfiture invariably heard when the spread-eagler realizes, around bill-time, that he has spent many more dollars than he ought to have spent, or than a native would have been asked to have spent. If I shall succeed in persuading Europe to correct, up to the American standard of simplicity, her complicated and obsolete

system of Riviera geography, I shall confidently expect to receive all the latest improved orders and decorations, that look so well on manly breasts, especially while dancing the german at "at home" functions. Function, be it remembered, is not physiologically connected with bodily organs in this country. It means merely any sort of alleged entertainment. By an oddly contrived paradox, most functions here suggest interesting chapters on anatomy rather than physiology to the purely medical mind. Perhaps it is all on account of the climate, otherwise I should not have mentioned it.

Bordighera must take its place among the comparatively new health resorts that are constantly springing up along the Riviera. But Bordighera is a station which has evidently come to stay. Its winter colony consists at present chiefly of English and German residents. Americans, it would seem, have yet to discover the town.

Bordighera has long been noted for the great number and unexcelled beauty of its palms. In the most protected gardens the dates actually ripen on the stem in the open air, a very rare occurrence elsewhere on the Riviera. The natives also enjoy the proud privilege of supplying St. Peter's at Rome with the graceful twigs distributed on Palm Sunday. Indeed, the luxuriant growth of the many palm plantations lends an oriental charm to all the landscape at this point. Dean Alford says that there are more palms in this neighborhood than in the whole of Palestine. Apart from their commercial value to the natives, and in addition to their attractive appearance, they are also useful in supplying shady promenades when the sun's heat grows intense. Many fine specimens of lemon and orange trees are also found in the groves and gardens of Bordighera.

The name of the place is said to be derived from *bordigue*, meaning a creek. Owing to this creek the inhabitants are supposed to have found enough shelter to allow them to become expert sailors and fishermen any number of centuries ago. The old harbor has long since been destroyed by deposits of silt, but the natives still indulge in a poor sort of fishery, and peddle out their meagre catches to the Mentonese and San Remose markets. It is certainly interesting to note that the fishermen in many places along the Mediterranean littoral employ a jargon which includes words of evident Greek origin, and must date back to the time of the Phocæan occupation. But beyond this profoundly etymological hint I have no present intention of departing from the main subject.

Those who are fond of rural life, quietude, picturesque views, fairly good hotel accommodations, and varied botanical pursuits in a warm southern climate, and in a well-sheltered district, will find at Bordighera an eminently satisfactory winter station. But he who needs the stimulus of convivial gayeties must not tarry there. Hopeless *ennui* would speedily claim him for a victim.

Bordighera is the most western health resort of the Italian Riviera. It is only about three miles from the Italian frontier station of Ventimiglia. It is ten miles east of Mentone, and less than seven miles west of San Remo. Ruffini's well-known romance, entitled "Doctor Antonio," has made the old Bordighera familiar to readers of novels.

The old town is quite separated from the new residential quarters. It is quaint and dirty, has narrow streets, with strange-looking arches and queer buttresses, that are supposed to weld the houses together in such a way as to resist the dreaded power of earthquakes. As a matter of fact, the last earthquake created sad havoc in all these buttressed towns. Some little villages (*e.g.* Bussana, near San Remo) have indeed never recovered, and remain destroyed and deserted.

The Ligurian natives here, as elsewhere, have a knack of forming artistic groups against the odd background of ancient alleys and dark streets, so that it is not surprising to find the amateur sketch and water-color fiend out in full force. He is generally a girl, too, and often looks severely spinsteroid. Sometimes he is in couples, one moiety wiggling the dauber, while the other half makes frantic efforts to keep from wiggling that part of the foreground consisting of dirty and ragged humanity. I think the natives get as much fun out of the amateur artists as *vice versa*. But I do not think the artists think so.

At any rate, the old town, perched so picturesquely on the gentle slope of a hill, and showing remains of its ancient castellated wall, now crumbling away, and from the crevices of whose ruined battlements many wild flowers creep; the glorious mountain panorama to the west; the curving beach, dotted with fishing boats and spread with queer tackle to the east; landward the sea of green gray olive-trees; and to the south our old friend, the real sea, with the sunbeams dancing over the glittering expanse of turquoise, produced a profound impression on my retina. Yet I heroically refrained from sketching, though I must confess to an occasional pressure on the button of my Kodak.

They call the old town the *Borgo*, or Bordighera *ai sopra*, and the newer sections stupidly constructed in the much-exposed plain skirting the beach, the *Marina*. But the real residential quarter of New Bordighera now extends in a northwesterly direction from the latter, *i.e.*, along the *Strada Romana*. This position has been wisely chosen. And it may be remarked here that Dr. Sparks's description of Bordighera[1] does not fit this, the present and future home of the foreign colony. Indeed, as compared with other chapters of this author's carefully prepared volume, his study of Bordighera is an unsatisfactory production, although it is often quoted in the newest publications on the Riviera.

Bordighera's permanent inhabitants number less than three thousand. And the winter colony can be readily counted in the hundreds. Accordingly prices there are lower than at neighboring San Remo, or than at Nice, Cannes, and Mentone. Titled persons and representatives of American wealth-rollers have not yet spoiled the place for simpler folk, who at present are permitted to flock by themselves in this unpretentious resort. How long will this idyllic state last? The visit of one crowned head would spoil its charm forever. The natives are obliging and well disposed toward foreigners, whom they have not yet learned to regard as their legitimate prey.

Bordighera is without doubt a favored spot, and to me it is a matter of surprise that a real boom has not yet struck the place. Of course its climate is that of the Riviera in general. Yet it is so situated that you can really find three climates there, within the radius of a few miles. This feature will be searched for in vain in all the publications touching the place.

Readers of the RECORD may, therefore, thank both Dr. Goodchild, my informant, and myself, who was able to verify his claims, for giving them three climates, where less favored mortals escape with one.

Bordighera is situated on a broad tongue of land, the promontory of Sant'Ampeglio, which runs some distance out to sea. But it is not on a narrow promontory like the Cap d'Antibes or Cap Martin. Moreover, most of the newer hotels, such as the Belvedere and Angst, are inland in a westerly direction from the old town. They lie completely sheltered from the worst winter wind here, which blows from the east. The sunny exposure of this, the future residential quarter, makes it an extremely desirable neighborhood. Here you have really a modified inland climate, for the salt sea-breezes prevailing at the Marina are considerably toned down before they reach it. Further up on the hillsides, thickly covered with the ever-present olive-tree, you begin to get a veritable mountain climate, whereas the true marine character of the climate is found only in the section adjoining the sea and near the cape of Bordighera. Naturally you can select combinations of these different climates, as they all blend at various points. In addition to this, it must not, of course, be supposed that the three zones are quite as distinct and

[1] The Riviera, p. 312. London: J. & A. Churchill, 1879.

separate in character as if they were situated in different degrees of latitude and longitude. But there certainly are appreciable differences.

Mr. Hamilton, in his exhaustive work on Bordighera,[1] says that the distinctive feature of the place is found in its large proportion of sea-winds and salty air, which gives the climate an essentially tonic character. But only the older portions of the settlement are fully exposed to these warm, damp sea-winds, and the description does not fit the newer sections.

Dr. J. A. Goodchild is the only English physician permanently residing here. He has spent fifteen winters at Bordighera, and tells me that he has not had reason to modify his earlier impressions as quoted by Mr. Hamilton. I cannot do better than borrow some of the more important points to which he has drawn attention, more particularly as he impresses one as a fair critic and observer, rather than a blindly optimistic local enthusiast.

The average temperature of Bordighera in the winter is much the same as that of its neighbors. But it is cooler in spring and autumn, and warmer in midwinter than most of them. The east bay of Mentone is undoubtedly the warmest situation on the entire coast, and yet, while the maxima at Mentone are usually from four to six degrees higher than at Bordighera, the minima are in almost every instance lower. The explanation consists in the fact that radiation goes on far less rapidly during the night from the surface of the densely sheltered plain and hills of Bordighera than from the bare and rocky mountains which form the coast at Mentone. Two other causes contribute to render Bordighera more suitable for those who wish to be much in the open air in mid-winter than either Mentone or San Remo. Both are due to its southwestern aspects, the two latter places facing southeast. The first is, that the sun sets into the sea so that its warmth is preserved till the last moment, while at Mentone and San Remo it sets nearly an hour earlier behind the mountains which lie to the west of these places. This is a matter of great concern to invalids in the short winter, as the afternoon is thus considerably prolonged, and the sunset chill comes on more gradually.

The second advantage consists in the much fuller protection which Bordighera enjoys from the east and southeast winds than its rivals. These are the prevalent winds there in mid-winter, and blow straight into the neighboring towns.

As regards humidity, Dr. Goodchild says that, while the average moisture is very low, the dryness does not equal that of Cannes. The changes from saturation to extreme dryness are also less rapid, owing to a richer soil and the abundance of trees. This is not without advantage, especially to newly arrived invalids, who have not been previously acclimatized. Hamilton places the general mean of moisture for the winter months at 64.

The shelter vouchsafed to New Bordighera is due to a series of unbroken hills from five hundred to one thousand feet high, that rise up about half a mile from the coast and intercept the east and northeast winds, and even to some extent the southeasterly breezes. Violent north winds can scarcely strike the place, and the northwest winds are also diverted away from it by the distant Maritime Alps. The *mistral* is still felt at times as a westerly wind, but it is robbed of the power that makes it a terror at Hyères, Cannes, and Nice. When it does blow it always brings fine weather in its wake. Bordighera is fully exposed to southwesterly breezes, but these only rarely blow with the force of a gale (vide later). The rectangular cape cuts off the edge of the really bad winds here, namely, the easterly winds. I wish to repeat, however, that I am writing of "New Bordighera" only, and not even the Marina, which is also of comparatively recent origin. Of course, currents of cold air come down the gaps in the mountains, but this is an objectionable peculiarity that no part of the Riviera is entirely exempt from.

[1] London: Edward Stanford, 1883.

When the southwest wind does attain the force of a gale lasting several days, they give it all sorts of bad names, and it then feels called upon to change its tactics by drenching the landscape in tropical rain. This diverts attention from its breeziness, and earns for it the name of *libeccio*, a liquid Italian designation for what we would simply call a snorter. They name some things better in Italy than in our country.

From some slight experience here, I am inclined to agree with Mr. Hamilton, who divides the easterly winds into two classes. In fact, if I had my way I should prefer to divide them into twenty classes, for equal distribution among twenty enemies. The east wind is never a pleasant wind. No. 1, the true Italian *levante*, is a wet wind blowing from over the marshy plains of Tuscany. Hamilton says that it is originally a *sirocco*, deflected from its southeasterly course by the chain of the Apennines. According to his observations it is the wind which not only brings the worst weather, but it also has the longest duration. No. 2, the other easterly wind, is not accompanied by wet weather. It is merely a cold Genoese *stramontana* drawn to the west by the sun's action on this part of the coast. It might be called an easterly mistral, so analogous in its origin is it to its western confrère. Like the genuine article, it is biting cold and strong. It blows furiously beneath a perfectly cloudless sky for hours or days. But, bad as it is, it does not altogether equal in malignant dustiness a true mistral.

I have dwelt on these winds because they have dwelt on me, and, while I consider Bordighera a sheltered place, at least for the Riviera, I wish to warn my countrymen against over-zealous partisans whom the Bordighera breezes have apparently never touched. It only hurts a place to circulate falsely optimistic views concerning it, views that a single visit will readily upset.

Observations on rainfall have only been made since 1879 at Bordighera. Mr. Hamilton places the averages yearly at about twenty-nine inches. Genoa is put down for fifty-two inches, Nice thirty-two, and Hyères about twenty-nine inches. Long-continued drizzles are rare, but violent showers are often observed. Snow is seldom seen, and never remains long on the ground after falling. The number of perfectly cloudless days is large at Bordighera. But I am afraid Mr. Hamilton must be set down as a zealous partisan when he gives the mean for Nice during the six winter months as 60, while crediting Bordighera with 80 absolutely clear days. Mr. Hamilton gives these details:

Perfectly Clear Days at Bordighera.

October	10.0
November	16.0
December	16.7
January	14.2
February	12.0
March	12.7
Total	81.6

Mean per month, 13.6, or about forty-five per cent. of the 182 days comprising the winter season.

Days Entirely Overcast at Bordighera.

October	4.7
November	5.0
December	3.5
January	5.0
February	4.9
March	2.7
Total	25.8

Mean per month, 4.3, which amounts to 7.8 per cent. for the season.

There is no system of drainage at Bordighera. The hotels and villas are provided with cesspools, that in most cases are placed at a sufficient distance from the residences to be only slightly obnoxious. Every cesspool ought to be properly ventilated, thoroughly cleansed when emptied, and always kept in good repair if cemented.

These obvious rules receive an added importance here from the fact that there is no general water supply, and that the character of the soil is such as to greatly facilitate ground filtration. I am not in a position to state that all these precautions are taken. But it is at least satisfactory to know that most of the establishments have English closets.

Water that residents are supposed to drink here is drawn from wells, and every hotel appears to have its individual supply. Some mountain-springs are also used for this purpose, but, so far as I have been able to ascertain the truth, it must be confessed that the potable water now in use at Bordighera cannot be safely recommended.

I understand, however, that negotiations are already under way to obtain a supply of the excellent Argallo water used at San Remo and Ospedaletti, the water to be conveyed as in the case of the places named, that is to say, by means of a completely closed aqueduct.

The only analysis of Bordighera water which I was able to obtain is one given by Hamilton, and refers to the springs of *Giunchetto*, near the *Madonna della Ruoto*. It is as follows: In one hundred parts of Bordighera water there are

Sulphite of calcium	0.03
Chloride of calcium	0.01
Chloride of sodium	0.04
Sulpho-carbonate of lime	0.03

The vital statistics of Bordighera show that it is a healthy place. The porous nature of the soil seems at present to still counteract the evils that may result from the absence of drainage precautions. The annual death-rate per mille is from twenty-two to twenty-three. This is satisfactory for the indigenous part of the population.

Dr. Goodchild informs me that the same absence of zymotic disease already mentioned in connection with other Riviera resorts is also a noticeable feature at Bordighera. Some years ago he observed some cases of a mild variety of measles, but as a rule he passes the entire winter without encountering an instance of any of the common contagious affections. Typhoid fever appears to be unknown here, which is more than can be said of some other Riviera resorts.

There are some fifty furnished villas now to be had at reasonable rates for the winter, and their number is annually increasing. Of the well-situated hotels the Belvedere, Angst, Londres, and Westminster may be mentioned. Fairly good stores, a bank, telegraph office, markets, and other conveniences essential to housekeeping are found in the new town, or village, as they prefer to call the place, in contradistinction to more ambitious neighbors.

Barring the inevitable English tennis-club, out-door life is restricted to walks and drives. New roads have been constructed and the old ones are being modernized. There is plenty of opportunity for pleasant rambles, and all about here there are really many bits of fine scenery that are well calculated to kindle enthusiastic admiration. In the words of Ruffini: Here you have in a small compass, refreshing to behold, every shade of green that can gladden the eye, from the pale gray olive to the dark-foliaged cypress, of which one, ever and anon, an isolated sentinel, shoots forth high above the rest. Turfs of feathery palms, their heads tipped by the sun, the lower part in shade, spread their broad branches, like warriors' crests. On the hill the slender silhouette of the towering church-spire cuts sharply against the spotless sky. Golden atoms are floating in the translucent air, and a halo of mother-of-pearl color hangs over the clear outlines of the mountains.

It is in the undisturbed possession of such natural attractions that the distinctive peculiarities of Bordighera are at present found, and not in the existence of a climate totally different from, and far superior to, that of other Riviera stations. And I may remark, in taking leave of this pretty place, whose white villas glisten in the far distance, that Dr. Onimus, usually so exact in his descriptions, has evidently failed to render justice to Bordighera.[1] He classes it with Vintimiglia, a town which certainly has no future as a winter health-resort.

Bordighera is claimed to be less stimulating and exciting than Nice or Cannes, but more bracing and less enervating than Mentone, resembling in these particulars its near neighbors, Ospedaletti and San Remo. Dr. Goodchild finds it an exceptional residence for almost any case marked by chronic degenerative tissue-changes. "Chronic bronchitis, asthma dependent upon the former disorder or upon disordered digestion, phthisis of a non-febrile type, exhaustion from over-work, nervous debility (neurasthenia), anæmia, chronic Bright's disease, chronic rheumatism, gout, and the varied forms of long-continued disease which affect mucous membranes, are all likely to derive more or less benefit from a winter's residence at Bordighera." Diabetes also seems to do particularly well at this Italian health-resort. Hæmoptysis furnishes a contra-indication. Acute hysteria, and all cases with a tendency to maniacal excitement, ought to be kept away from there.

If Bordighera is new, Ospedaletti is more so. If the former is small, quiet, and gratefully rural, the latter is diminutive, still as a spiked gun, and nothing if not intensely bucolic. Situated within easy walking distance of, and about midway between, two important health-resorts, viz., Bordighera and San Remo, there does not at first sight appear to be any *raison d'être* for its existence as a growing winter station. Nevertheless, and although it owes its present appearance to misplaced speculation, there is little doubt that its pretensions to rank as a sanitary resort are based on a really privileged position and decidedly agreeable surroundings.

According to Ruffini, a ship belonging to the Knights of Rhodes, while on a cruise in the Mediterranean, landed some men sick of the plague here, where barracks were erected for their reception. They served as the first nucleus for the village. Some semblance of truth is given to this view by the ruins of a chapel called "Ruota," which may be a corruption of Rodi (Rhodes). A little hamlet of the same name also still exists, and is the chief point of attraction for a favorite excursion in this neighborhood. And, finally, almost on the summit of Cape Nero, the quaint old tumble-down village of Colla di Rodi is built. "The visitor will find here what he would little expect to see in such a remote and obscure place, a library of six thousand volumes, and a collection of one hundred and twenty original paintings, most of them by the old masters, Fra Bartolomeo, Bassano, Caracci, Paul Veronese, Salvator Rosa, Domenichino, Guido Reni, Andrea del Sarto, Carlo Dolce, etc."[2]

Some years ago the physician to the then Empress of Russia was sent on a tour of investigation, having for its object the discovery of the most sheltered spot on the Riviera. After careful search and inquiry he selected Ospedaletti as the most favored site, and one generally credited with being two degrees warmer than any other resort on the whole coast. As soon as this became known, and under the speculative leadership of the Crèdit Foncier, of Paris, the land was quickly bought up, a huge and magnificent Casino was erected, and numerous improvements promised. This premature little boom effectually killed the place. It never became the fashionable station that it was fondly hoped could be created over night. To-day the Casino looks like a huge white mausoleum in all the loneliness of its forsaken grandeur. Apart from this structure, the clean and new Hotel de la Reine, a few minor pensions, several villas, and the rather dirty old village, constitute all there is to Ospedaletti. For undergoing a course of absolute quiet and repose in a sunny, well-protected situation, no more suitable place has yet come to my notice on the Riviera. American physicians

[1] L'Hiver dans les Alpes Maritimes, p. 110. Paris: 1891.

[2] Macmillan: The Riviera, p. 208. London: J. S. Virtue & Co., 1892.

could do worse than recommend it, where that line of treatment promises well for their patients.

Although most Riviera books only vaguely intimate it, there is no doubt that little Ospedaletti is more effectually protected from winds than almost any other resort on this coast. Moreover, it gets the sun early and keeps it late. There is also less blinding calcareous dust there than, for example, at Hyères, Cannes, or Nice.

Ospedaletti spreads out for something like a mile along the head of a small crescentic bay. The eastern headland of this bay is formed by Cape Nero, and the western extremity, much farther from the village than the former, by Cape Sant' Ampeglio. Thickly planted olive hills surround the place, relieved in the plain by orange and lemon trees, and the usual array of graceful palms. Successive girdles of mountains protect it from the icy northern blasts, but less in a northeasterly than in a northwesterly direction. It is fully exposed only to the warm westerly marine breezes.

Immediately behind the village there rises a hill of gentle slope, and a number of mountain torrents of mild proportions trace their undulating course seaward. The place is so hedged in as to constitute a veritable sun-trap, and to preclude the possibility of ever being transformed into a town of any size.

It is a pity that the railroad tracks are laid close to the sea, as the beach is a sandy one, and a pleasant promenade along the shore has thus been ruined. As at Bordighera, the evening chill is less sudden and less intense than at resorts backed by bare rocks.

The drinking-water used at Ospedaletti is soft, sparkling, and pure. It is taken from the same source as that which supplies San Remo, *i.e.*, Argallo. It could not be better, and is by long odds the best potable water to be found on the Riviera.

If the French speculators, instead of erecting a huge Casino, had utilized the hot sulphur springs found a few steps beyond the village, the permanent nucleus of an attractive sanitarium might easily have been established. As it is, this means of adding to the natural advantages of the place has been overlooked or neglected. Gouty and rheumatic elderly people should do very well at Ospedaletti, and a bathing establishment of modern type would soon be welcomed by discerning invalids of that class.

It is hoped that this brief sketch may help to make known the possible resources of a little place that has, as yet, been scarcely mentioned by medical writers on the Riviera.

(To be continued.)

THE TEST FOR THE COMMA BACILLUS.

To the Editor of the Medical Record.

In view of an impending epidemic of cholera in this city, and probably in the greater portion of the other cities this side of the Atlantic, I desire to give your readers the usual method of examination of dejecta of suspected patients as practised in the Bacteriological Institute at Berlin last summer.

The articles necessary for the examination are: 1. A microscope with Abbe's condenser and the oil immersion system. 2. A solution of fuchsin 1 gm. (Rubin) in 90 c.c. distilled water and 10 c.c. alcohol. 3. A few pipettes, glass rods, object-glasses or cover-glasses, and slides. 4. A few platinum wires melted or soldered to the end of glass rods. 5. A few hollow slides. 6. Ten to 12 glass plates or glass panes about 12 ctm. long and 9 ctm. wide. 7. About a dozen ordinary flat plates. 8. An alcohol lamp, or gas being preferable, a Bunsen burner. 9. A number of test-tubes with sterilized gelatine. 10. A number of test-tubes with sterilized nutrient bouillon. 11. A few Erleymer's glasses, about one-third filled with one per cent. pepton solution; 1 gm. pepton, 0.5 gm. chloride of sodium, 100 gms. distilled water. 12. Concentrated sulphuric acid.

The dejecta of suspected patients are scattered in as thin a film as possible on a plate, and this is carefully examined with the aid of a platinum wire for a mucous flake, "Schleimflocke," which is laid on the edge of the plate and isolated.

From this we take a piece the size of a pin's head, and sterilize a platinum loop (by drawing it through a Bunsen burner), and then rub it on a cover-glass until it is evenly divided; then remove all superfluous material by pressing another cover-glass over it, and allow it to get air-dry.

Then draw it three times through a Bunsen burner in the same manner as we proceed in the examination of sputa for tubercle bacilli, and by means of a pipette add a few drops of the fuchsin solution for about one to two minutes to the cover-glass, and then wash it off in distilled water. Then add a drop of water to the cover-glass, lay it on a slide, and examine it with the oil-immersion system.

If we wished to preserve the specimen we could, after staining with the fuchsin solution, wash off the excess of stain with distilled water and allow it to get thoroughly air-dry, then add some Canada balsam.

In some cases called "foudroyant," where the intestinal contents have a colorless or pale red color, with slimy (mucous) flakes or with a flour-soup mass, we will frequently find, especially, however, in the reaction period with cases running a slow course, no mucous flakes, but large quantities of blood. Here there are, besides cholera bacilli, large quantities of other micro-organisms, and sometimes only the cholera bacilli sparingly, so it is advisable, to render a diagnosis absolutely positive, to add to microscopical examination the examination by the aid of "cultures."

Cultures can best be made in "hollow slides" by smearing the border with vaseline, then bringing a small drop (from a platinum loop) of sterilized bouillon into this hollowed groove of the slide, and inoculating this latter bouillon with the smallest possible particle of the suspected mucous flake. The cover-glass is carefully laid on the vaseline, which serves to render the groove air-tight, and also prevents the evaporation of this drop of sterilized bouillon, which is then laid aside in a temperature of 20° to 22° Celsius. The room can be heated if the temperature of the air is below this. It takes about twenty hours to have the bouillon turbid, and this slide (hollowed, containing this infected bouillon) can be examined with the oil-immersion without disturbing the culture. The best place to examine is the border line, and even if but few cholera bacilli were formerly present, they grow so rapidly that they will be easily recognized by their curved shape.

Culture Method by Schottelius.—Take 100 to 200 c.c. of the suspected dejecta from intestinal contents and place them in a beaker glass containing 250 to 500 c.c. of mild alkaline meat bouillon, and mix thoroughly; then let this mass stand about twelve to twenty-four hours at a temperature of 30° to 40° Celsius. After this time the cholera bacilla have usually increased in numbers and are found on the upper layer of the fluid. By introducing at the upper layer a platinum loop, and taking out a small drop (about the size of a lenten seed), and rubbing it on a clean cover-glass, we allow it to dry thoroughly (air-dry); then draw it three times through a flame to fix it, and finally stain, as previously described, with the fuchsin solution.

Post-Mortem Tests.—To examine suspected intestinal contents I open the abdominal cavity carefully and ligate, with aid of two stout cords or twine, a piece of the ileum (about three to four centimetres in length), well filled with fecal contents, near the cæcum. It is well to apply a ligature close to the upper ligature, and another below the lower ligature, and cut between the two ligatures so that the intestinal contents will not be spilled in the abdominal cavity and prevent the completion of the autopsy. It is well to cut out a piece of the intestine, about three to four centimetres in length, from the upper portion of the ileum,

and to lay the excised portions into ordinary water until ready for use, *i e.*, examination of contents. The method is the same as has been described, *i.e.*, take a small piece of flocculent mucus, about the size of a pin's head and examine it. Gelatine stroke and stick cultures, and also potato cultures, can be made for examination. They also grow on blood-serum and agar.

A Practical Point is the following: Koch found cholera bacilli in the water of an East Indian tank. But it is the rule that the cholera bacillus does not develop very much in our ordinary water, owing to the presence of other bacteria which easily destroy the cholera bacillus; but they do develop marvellously in sterilized water (water free from bacteria); so, for instance, soup is an elegant medium for their development.

Human beings are usually infected through the mouth—*i.e.*, through food, etc.—and it is found that if the stomach is partly filled and has sour reaction (gastric juice) the latter acts as a barrier to the infectious material.

Cholera bacilli require for their growth a mild alkaline nutrient medium, and are very sensitive regarding mineral acids.

By adding 0.07 to 0.08 per cent. of muriatic or nitric acids to a neutral nutrient solution the growth of the bacilli was stopped. This statement is found in "Günther's Bakteriologie," page 210, and is made by Kitasota.

Louis Fischer, M.D.

40 Rivington Street, New York.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 3, 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	46	15
Scarlet fever	36	4
Cerebro-spinal meningitis	0	5
Measles	59	8
Diphtheria	59	18
Small-pox	6	3
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0
Mumps	0	0

The Cigarette Epidemic.—Our national legislators still find time occasionally to attend to the public health. A report severely condemning cigarettes has been made to the Senate by the Committee on Epidemic Diseases. The committee does not believe that the Federal Government can do much about it, except, perhaps, to forbid their importation and prevent their manufacture in the District of Columbia.

A Useful Suggestion.—Professor Laborde declares that violently jerking the tongue will excite the respiratory reflex in cases of drowning, etc., when other means have failed, and a story is going the rounds of the press relating how two young men were saved by him at a time when their lives were despaired of. As the method is simple and within the reach of everyone, there can be no objection to giving it a trial.—*Medical Press.*

Mr. Huxley and the Title of "Doctor."—Mr. Huxley, it seems, though M.D. of Breslau and M.B. of the University of London, and the happy possessor of endless doctorates of all sorts, objects to the title of "Dr." Huxley. He can stand being called "Professor," but draws the line at "Dr.," which many men seem to value so highly. Mr. Freeman and Matthew Arnold, we are told, objected to be called "Professor." It is all intelligible enough. Great men have a consciousness of something *in* them that supersedes all the aid and adornment that titles can give. "When unadorned, adorned the most." And in this they are a warning, if not an example, to lesser men, who attach an excessive importance to the mere embellishments of a name, and very often to the assuming of a title which they do not possess.—*Calcutta Medical Reporter.*

Napoleon's Pulse.—According to Corvisart, the normal pulse rate of Napoleon Bonaparte was under forty beats in the minute.

An Efficient Oxytocic.—Among the Kirghiz tribes of Central Asia it is the custom, in cases of difficult labor, to seat the woman on a horse and make him gallop for a couple of miles over the steppe.

The English Disease.—The poor, unenlightened Mohammedans of Damascus, who couldn't be expected to know better, call drunken men victims of "the English disease."

A Fatal Curiosity.—A weaver in Accrington, England, put a turpentine stupe over his abdomen for the relief of a severe colic. It did not seem to burn as much as it ought, and he struck a match to see what was the reason. The match ignited the turpentine and the man was burned to death.

BOOKS RECEIVED.

A Treatise on Hygiene and Public Health. Edited by Thomas Stevenson, M.D., and Shirley F. Murphy. In two volumes, 8vo, illustrated. Vol. I., 1013 pages. P. Blakiston, Son & Co., Philadelphia, Pa. Price, $7.50.

A Practical Treatise on Diseases of the Skin. By John V. Shoemaker, M.D. Second Edition, revised and enlarged. 8vo, 878 pages, illustrated. D. Appleton & Co., New York.

A Text-book of Morbid Histology for Students and Practitioners. By Robert Boyce, M.B. 8vo, 477 pages, illustrated. D. Appleton & Co., New York.

Geographical Pathology. By Andrew Davidson, M.D. Two volumes, 8vo. Vol. I., pages 1–482; vol. II., pages 483–1005. D. Appleton & Co., New York.

Naphey's Modern Therapeutics, Medical and Surgical. Ninth Edition. In two volumes, 8vo. Vol. I., 1034 pages. P. Blakiston, Son & Co., Philadelphia, Pa.

Book on the Physician Himself, and Things that Concern His Reputation and Success. By D. W. Cathel, M.D. New Tenth Edition. 8vo, 348 pages. Price, $2.00. The F. A. Davis Co., Philadelphia, Pa.

The Essentials of Histology. By Edward A. Schäfer, F.R.S. Third Edition. 8vo, 311 pages, illustrated. Price, $3.00. Lea Brothers & Co., Philadelphia, Pa.

A Manual of Chemistry. For the Use of Students of Medicine. By Arthur P. Luff, M.D. 12mo, 522 pages, illustrated. Price, $2.00. Lea Brothers & Co., Philadelphia, Pa.

The Student's Handbook of Surgical Operations. By Frederick Treves, F.R.C.S. 12mo, 508 pages, illustrated. Price, $2.50. Lea Brothers & Co., Philadelphia, Pa.

A Handbook of Hygiene and Sanitary Science. By George Wilson, M.D. Seventh Edition. 8vo, 751 pages. P. Blakiston, Son & Co., Philadelphia, Pa. Price, $3.25.

Human Monstrosities. By Barton Cooke Hirst, M.D., and George Piersol, M.D. Part III., folio, pages 113–150, illustrated. Lea Brothers & Co., Philadelphia, Pa.

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DISEASES AMONG INDIANS.

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ERUPTIVE DISEASES.

FROM no eruptive ailments are Indians free, and some of them have at times raged with a violence unknown among other races, save perhaps among soldiers in time of war.

Small-pox has played sad havoc with some tribes. During the year 1873, one-ninth of the Santee Sioux, of Nebraska, died of small-pox. In 1832 that contagion swept away great numbers. In 1837 and 1838 small-pox destroyed the Mandans, a tribe occupying the shores of the Upper Missouri, entire families perishing.

In the summer of 1878, of the Mohave and Chimehuevis Indians of Arizona, numbering only eight hundred and thirty eight souls, one hundred and seventy died of small-pox. There are few tribes who do not bear in pitted faces and sightless eyes evidences of its ravages. They hold it in mortal dread, and a case or report of small-pox will cause greater consternation and stampede in a camp than a hostile invasion.

For the seven years ending in 1888, only eighty-one cases are reported from all agencies; while the mortality from the milder disease, measles, was eighty-three in the single year 1888. In connection with the decrease in cases of small-pox reported, it is well to observe that in these seven years were vaccinated 21,633 Indians, or nearly double the number born during that period.

The rapid spread of small-pox and the fearful havoc it has played in the Indian population in former years I believe were due, in great measure, to their unprotected condition. As vaccination becomes more general among them the mortality from small-pox will be immensely decreased.

In the last few years no epidemic of small-pox has raged among any Indian tribe.

At White Earth Reservation, in 1883, an epidemic caused many deaths. In the little village of Hannahville or Cedar Creek, near the Mackinac Agency, Mich., in 1882 there were twenty deaths out of a population of only two hundred. Fifteen deaths occurred among the Southern Utes in 1883. It raged in every village of the Pima tribe in Arizona in 1884.

In the seven years frequently referred to there were more than six hundred cases of *measles*. This disease, so trivial under favorable hygienic conditions among whites, finds in the Indian a most vulnerable pulmonary system, and meeting little resistance there, by disabling that leg of the vital tripod causes many deaths. In the year 1888, of one-hundred and eighty-seven cases eighty-three died. Of sixty cases in the boarding-school at Osage Agency, I. T., in 1882, there were five deaths, notwithstanding the children received careful nursing from the employés, showing that even under favorable hygienic conditions the resistance of Indian children to this disease is below the average.

Dr. Treon, of Crow Creek Agency, in a severe epidemic in 1888, lost one in fifteen cases treated in camp; but of one hundred and thirty cases treated in the boarding-school, where favorable surroundings and good nursing could be procured, not one was lost.[1] He observed that the stage of incubation was longer than among whites, and that there was greater tendency to severe capillary bronchitis; which latter fact receives ready credence from those familiar with the Indian constitution.

An epidemic prevailed among the Apaches of San Carlos Agency, Arizona, in 1881, and among the Pimas in 1883, causing many deaths.

Joseph's band of Nez Percés, in the spring of 1888, after their return to Washington Territory, suffered severely from a malignant form of measles. On certain Sioux Reservations in Dakota, it has been the occasion of such mortality in the last two years as to cause decrease in census of tribes who to that time were steadily increasing.

Epidemics of whooping-cough have usually followed measles, as in white communities, and have been more fatal in about the same degree as measles. Among the Sioux at Devil's Lake in 1879, at Lower Brulé in 1882, among the Round Valley Indians of California in 1886, and among the Mohave and Chimehuevis of Arizona in 1886, this disease prevailed and many deaths among children were caused by it.

Mumps[2] occurs frequently and pursues the same course as among whites. An epidemic is at present raging on the reservation where I write, but seriously interferes with comfort in few cases. Metastasis to the testicles has occurred frequently.

Erysipelas was treated in 2,065 Indians out of 500,000 cases of all diseases reported in seven years. Of six hundred and fifty in 1888, sixteen were fatal.

A small epidemic with some points of interest occurred in my practice on the Crow Reservation, during the winter of 1887 and 1888. There were fifteen cases, fourteen of which were in the boarding-school of forty-five pupils. The remaining case was a young white man living a few rods from the school, and who suffered a most severe attack after receiving a scalp wound from a falling bell clapper.

Two cases of the fourteen in the school were plainly traumatic. An Indian boy received a scalp wound from a boot thrown at his head, cutting a gash an inch long. This healed kindly. Eight days after, the boy complained of headache and pain about the wound; eyes suffused, diarrhœa, temperature A.M., 100¼° F., P.M., 101° F. The next evening temperature was 104° F., vomiting and diarrhœa, and at times violent delirium. The succeeding morning temperature was normal and pain and swelling gone from wound, and patient about well.

About the same time of above injury, another boy fell against a stove and received a scalp wound above the right temple, which healed readily. Two weeks later the seat of the wound became tender; around it, in a radius of two inches, the scalp was sensitive and elevated. About an inch from the wound toward the right ear was a small lump under the skin, tender, movable, giving to the fingers the sensation of a dermoid cyst. Another just like it, as large as an almond, just behind the right ear. Tendon of right side of neck sore. Temperature reached 102½° F., and gradually lowered, tenderness and "lumps" subsiding.

The remaining twelve cases were apparently without open lesions; all occupied the usual seat on face be-

[1] Cincinnati Lancet-Clinic, November, 1888, p. 586.
[2] While not an eruptive disease, this is noted here.

tween brow and lips. Three were typical severe cases with usual symptoms, and nine, four boys and five girls, were peculiar.

In the first case my attention was called to an enlarged gland in the neck. I observed two or three cervical glands enlarged and tender. The same evening I found a cellular swelling with well-defined margin including these glands, extending onto the face, under the eye, and to the bridge of the nose; very little redness or tenderness. The girl was abed, but had no appreciable fever and was entirely comfortable. The next day the swelling subsided, and she was quite well. Several other girls were similarly affected, some remaining abed a part of a day, some not at all; none had perceptible fever, no vesication, no desquamation. One boy had a single gland just in front of the ear, swollen and tender, and the eye on the same side a little suffused and watering; another had one eye much inflamed only on the outer side of the ball; both were well the second day. Another had slight flush over face, tongue pointed and red, bowels constipated and sensitive to pressure, temperature from normal to 100½° F. for four days, and well.

Another temperature, 9 A.M., 101¼° F., tongue pointed and red, light-coated, right eye injected, right submaxillary glands enlarged. Headache, temperature, 6 P.M., 102° F.; next morning, 100½° F., 6 P.M., 102° F. Cheeks suffused. Third day, A.M., 100½° F., P.M., 100¾° F. Fourth day, temperature normal, and returned to duty.

These cases are notable for their mildness and brevity. Several of them could not possibly have been diagnosed erysipelas, except in the light of the typical cases occurring in the same building at the same time.

It is interesting to observe, occurring in the same epidemic, from the same source of contagion apparently, under the same constitutional and hygienic condition, cases so mild as the suffusion for a few hours of a single eye or swelling of a single gland, and others so severe as to cause fierce delirium or (in the case of the young white man) profound coma for some hours with extensive vesication, desquamation, and loss of hair.

There was no outside source of contagion in this epidemic. There had, however, occurred in the same building, the preceding year, a dozen or more cases of the mild form described above, and the bacilli of Fehleisen doubtless maintained winter quarters in the building. Several of the same patients had suffered the year before.

Such mild cases often puzzle the surgeon. Drs. Grindon and Fry, in a discussion before the St. Louis Medico-Chirurgical Society, recognize this difficulty and report as an "erythematous affection"[1] cases quite similar to the above.

Subsequent to this epidemic a case was seen in an Indian policeman, peculiar in this, that the lesion in which the inflammation began being on the finger, the most serious inconvenience from the attack was from a phlegmonous swelling becoming a sluggish abscess, which suppurated many weeks, situated in the sheath of the biceps near its insertion.

Constipation.

The Indians are universally and persistently constipated. I incline to the opinion, however, that this is an ailment common to the human family. Among 505,940 Indians applying to Agency Physicians for the seven years between 1882 and 1888, inclusive, were 36,254 who sought relief from constipation. These figures may be somewhat exaggerated, as I shall explain later on, but, this admitted, constipation is more frequent than we should expect.

An explanation given me by a negro who has lived many years among the Crow Indians, I think, possesses a certain amount of truth. He attributes it to the fact that formerly they lived exclusively upon meat, whereas now they have an insufficient supply of meat and much of their food is bread, made of bolted flour, and potatoes, both cooked without grease. To this may be added the fact that the wild berries, which are eaten both from the bush and dried for winter use, abound largely in tannin and tend to constipation.

School children, on the contrary, to whom is furnished a much greater variety of food, suffer much more frequently from laxness of the bowels than from constipation.

As I have said, it is likely the extent to which constipation exists is over-estimated, from the fact that Indians, like other races, find, or think they find, in free purgation a cure for all ills.

An Indian to whom I had given an anti-syphilitic solution, returned the next day, and after indicating by suggestive signs that it had neither purged nor caused emesis, made the sign of inquiry meaning, "As it neither purged me nor vomited me, how can it do me good?"

When an Indian seeks a purgative medicine, I often find on inquiry that he has had regular daily evacuations, and that it is not for constipation but for some other ailment that he prescribes the cathartic.

The ancients made the spleen the seat of melancholy and other ills. Those people living in the malarial belt of the great Mississippi Valley, with whom most of my life has been passed, charge to the liver all the ills from which flesh or mind may suffer, while the Indian declares *me spör' kow-ekē*, "my stomach is bad," and is truly nearer the right.

This mania for purging, which I believe exists among all races, is worthy the consideration of the physician, first, because an idea cannot be of such widespread acceptance and not contain much truth, that a thorough evacuation of the alimentary canal must indeed be beneficial in many different ailments; and second, that he may intelligently combat the enormous *misuse* of purgatives.

It is suggestive that the popular restriction of the word "physic" to a cathartic medicine is paralleled by the use among the Absaraka Indians, the only tribe with whose language I am familiar, of the word *e'y-she'-o*, which etymologically means any medicine to be taken internally, but which, alone, when used, is constantly restricted to a cathartic medicine.

In connection with constipation among Indians it is interesting to read the following opinion, expressed by a St. Louis physician before a medical[1] society of that city. "The constipation so common among civilized people, and especially females, is in some measure due to the restraint of clothing and modesty; if children and men and women were no more restrained by clothing and a sense of what is decent and proper than the beasts of the field, constipation in the human family would be as rare, no matter what their ordinary diet, as it is among the beasts of the field." Now, the Indian will leave the tepee just as the dog will go out of the house or kennel, but he (or she) will stop within ten feet thereof, and in sight of the entire village, when and where the inclination overtakes him, spread the all-useful blanket above his head and obey with commendable promptness the calls of nature—still he is constipated.

Conjunctivitis.

Cataract is not infrequent, but other forms of eye disease not conjunctivitis or sequelæ to it are in proportion so rare as to be ignored here. Of five hundred thousand cases of all diseases treated among Indians, nearly sixty thousand were conjunctivitis, a much larger number than of any other single ailment. Trachoma, pterigium (and more rarely iritis) are frequently seen as sequelæ or result of the same cause.

The causes of the great prevalence of conjunctivitis may be briefly enumerated—smoke, dust, snow, paint, dirt. It is the habit, as widespread as the Indian race, to paint the face constantly, and the body on occasion. This paint is applied in part only for cosmetic effect, it is used as well for the same reason that Orientals anoint with oil, and other civilized races wash with water. The Indian says it protects the face from the sun in summer

[1] Courier Medical, December, 1887.

Courier of Medicine, February, 1888.

and from cold in winter. It is applied to the new-born baby, and is part of the preparation of the body for the grave. The paint used is usually an earth pigment, as sienna or umber, but frequently contains the more harmful mineral colors. It is applied freely about the lids and lashes, and cannot but have an injurious effect. Accumulation of the variety of material we call "dirt" is the necessary result of the substitution of the application of paint for ablution with water. The alkali found throughout the arid cactus belt of the West, the home of many of the Indian tribes, is painfully irritating; particularly as in the same region usually prevail frequent high winds lifting the dust and sand, and driving fine, irritating particles into the eyes of the unfortunate inhabitants.

One who has ridden all day with the rays of a bright winter sun glittering on endless fields of snow, can appreciate the pain of "snow blindness;" yet the Indians have strong eyes, going constantly in bright sunlight without hat or other protection for the eyes; but those of the Northwest, who must endure the glare of the sun on the snow for four or five months, suffer much from conjunctivitis from this cause.

Perhaps the most potent cause affecting the large part of the race who continue to live in the primitive method, is smoke. Their house, the tepee, is a conical tent with an opening at the apex for the exit of the smoke; but smoke is proverbially perverse, and frequently will not exit at this opening. The Indians crouch in this for hours until the wind or other factor changes and the smoke ascends. The result is severe irritation of the delicate membrane and resulting conjunctivitis, rendered chronic by persistence of the cause.

Epidemic conjunctivitis, the form usually called catarrhal, I have not seen. It may however exist, as March, the month in which we would expect it, is called in the Sioux tongue the "sore-eyed month," indicating great prevalence of the disease at that season.

Notwithstanding its great prevalence, conjunctivitis is not often serious in its results, and blindness is not a frequent infirmity among Indians.

(To be continued.)

AN EFFICIENT METHOD OF CONTROLLING HEMORRHAGE AFTER SUPRA-PUBIC PROSTATECTOMY.[1]

By E. L. KEYES, M.D.,
NEW YORK.

No operation upon the genito-urinary tract is, in my opinion, less technically elegant than a thoroughly performed supra-pubic prostatectomy.

I do not, of course, refer to the first step of the operation—the supra-pubic cystotomy, or even to such minor forms of prostatectomy as may be included in the cutting or snaring away of outstanding pedunculated lobes, or even the prostatic bar, the nipping out of which may be æsthetically performed, carried out under the supervision of the eye, and, indeed, be a rather graceful operation; but what I do mean is the thorough evisceration of the prostatic body, the cutting, snipping, gouging, twisting, tearing operation and forcible technical manœuvres required to shell out and do away with such portions of the prostate from its fibrous investing capsule as it may seem proper, in the mind of the operating surgeon, to remove.

This major operation cannot be done under the guidance of the eye. The bladder, of course, is opened, the eye inspects the offending redundant tissue, and the mind takes in the situation and decides upon what must be done; but after this, when the first incision has been made into the prostate, the intelligent finger must direct the work at the bottom of a well of blood, and no matter how vigorous the operator or how brilliant his execution, a large amount of the vital fluid must of necessity be lost during the operative manœuvre alone.

[1] Read before the New York Academy of Medicine, April 7, 1892

Of course, the capacity for bleeding varies in different subjects. Some of the fibrous prostates bleed hardly at all, while others, of the soft, succulent, juicy variety, shed out the precious fluid upon each fresh incision to an extent that is alarming—even revolting—to the surgeon not familiar with this kind of surgery.

It gives the whole procedure an aspect of brutality, shared by no other operation upon the genito-urinary tract with which I am familiar, unless it be a lumbar, extra-peritoneal nephrectomy, in a fat subject, performed by an inexperienced operator through too small an external incision. This rivals—perhaps excels—prostatectomy in the gross appearance of apparent brutality.

This rough operation has to be done very frequently upon subjects particularly unsuited for enduring the strain of severe hemorrhage. The prostate, in our present stage of medical knowledge, does not usually justify operation in the earlier periods of its overgrowth. At this time the moderate functional disturbances to which it gives rise are tolerated by the patient, and elected to be endured rather than the alternative of a grave operation, the mortality of which, even in the best hands, is so exceptionally high.

Therefore the sufferer compromises with his misfortunes, and slowly drifts along into a constantly progressive deteriorated condition; his ureters enlarge, his kidneys, acting under back pressure, perform their function imperfectly; that general fibrosis of the entire genito-urinary apparatus, which has been crystallized into a pathological entity by Guyon under the name of prostatism, goes on; the finer arterioles become sclerotic, and bundles of fibrous tissue replace the natural muscular structure and squeeze out the vitality of the tissues making up the entire system. To this is added that natural fatty atrophy which attaches to all the tissues in advanced life, where nutrition is defective and deteriorating changes are taking place.

Polyuria, defective elimination of the waste products of the economy, and albuminuria, in many instances, mark the patient's retrogressive steps. Failure of nutrition is shown by his anæmia, which is often very pronounced, his impaired digestion, and the general depression and imperfect performance of all of his functions.

Finally, when life becomes a burden, and when he grasps at any straw that offers to furnish him relief, at no matter what risk, then the surgeon is called in and prostatectomy proposed and accepted.

I am in the habit of looking upon a patient in this condition very much as I would regard an individual in an open field bordered by a deep and rapid river. The individual cannot swim, but an enraged bull is chasing him, and he must either suffer himself to be impaled or gored to death (this is his prostatetic progressive disease), or he must cast himself into the flood and trust to some kindly Providence to fish him out (this is prostatectomy).

How many patients die after prostatectomy from hemorrhage I do not know. Probably none die directly from loss of blood. No large arteries are severed and the bleeding does spontaneously arrest itself after a time. Moreover, the means already in use by the profession generally suffice to moderate the hemorrhagic loss. Yet we all know that a certain positive proportion of these cases suffer severely after their operations, and many, when they die, die within a few days without suppression of urine, their demise being ascribed to shock, exhaustion, failure to rally, and the like; and what proportionate influence the factor of hemorrhage may have exercised in this disastrous eventuality is and must remain a matter of conjecture.

It certainly cannot be denied but that a satisfactory means of controlling hemorrhage from the eviscerated prostate, after the rapid performance of the operation, must be an element which will eventually help to lend to it statistical advantage.

The common means of arresting hemorrhage after operations upon the bladder which has been opened

above the pubis, need only to be mentioned to be familiarly recalled by all of you. They are briefly the ligature in accessible positions, pressure for moderate oozing, the catgut stitch passed with a short curved needle through the tissues about the point of incision, or across the narrow hemorrhagic area; the Paquelin or other cautery; the electric cautery as applied through a platinum wire loop; forci-pressure forceps applied and left *à demeure*—a manœuvre I have on more than one occasion successfully adopted.

I show you here two especially curved long forci-pressure forceps designed for use within the bladder. With them small morbid masses, particularly if pedunculated, may be grasped and removed under the eye without hemorrhage, the catgut suture being applied with a needle through the underlying tissues before the forceps is removed, and tied before the hemorrhage has had a chance to more than fairly express itself.

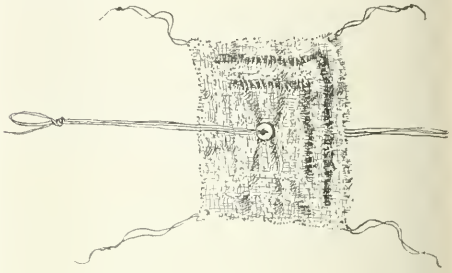
The Albarran tubes, which I here show you, constitute another means of controlling hemorrhage. They have been used successfully upon animals and upon the human subject, by being passed into the urethral orifice on either side and left there to drain the urine away, while the outer parts of the bladder are packed with any suitable substance for the purpose of exercising pressure. The whole bladder may be packed (without the use of these tubes) with gauze or sponges tied upon a string, and subjected to uniform pressure for a number of hours, without harming the kidney; but the pressure is distressing and the time during which it may be employed limited. The excavated prostate itself may be crowded full of iodoform or other gauze, but it does not stay well in place, and excessively hot water may be injected freely and for a long time into the bladder with advantage for the purpose of controlling hemorrhagic oozing; but during its use a considerable amount of blood is necessarily wasted.

I was so forcibly struck with the unnecessary loss of blood in some of these operations that I performed last year that I gave considerable thought to a suitable method for arresting the hemorrhage in this funnel-shaped cavity left by the excavation of the prostate, and finally hit upon the device which I have to offer you to-night.

It need not, of course, be employed in every case, but in all those in which the patient is particularly feeble and anæmic, and in which the personal hemorrhagic tendency is high, it can certainly do no harm, and, it seems to me, must always do good. I have only recently gotten the size and shape of the plug which is to arrest the hemorrhage into what I believe to be about the proper form. I show you here two prostates—the last two that I have removed. The removed fragments in one weighed two ounces and a half, and in the other a little over two ounces. The amount of anæmia and general deterioration in both these old gentlemen was excessive. The plug was used upon both of them, and neither one lost, I may say, any blood after the dressing was placed. It was removed in one instance after twenty-four hours, in the other after thirty-six hours. In neither instance was there any considerable complaint of its pressure—nothing, at least, that a moderate amount of morphine could not control, although it certainly was felt, and in neither instance was there any recurrent hemorrhage.

The plug, which I show you here, is something like what is customarily used after perineal cystotomy, in the form of a shirted cannula, excepting that in this instance there is no need of a cannula, because the supra-pubic wound in the bladder must be left open for the subsequent removal of the plug. The urine flows away unobstructedly.

The tampon is made of bichloride gauze. A square of four thicknesses of gauze is first cut, the length of each side being about six inches. Upon this are placed eight thicknesses of gauze cut square, each side measuring four inches, and upon this eight other thicknesses of gauze, also square, the side measuring three inches. Centrally, upon the three-inch pad a small white shirt-button is tied by stout silk ligatures, transfixing the pad and tied upon the six-inch square surface. This central button also has a piece of silk attached to it, running out freely in the direction away from the three-inch surface. This is to facilitate extraction. Each of the corners of the six-inch pad is stoutly tied with a piece of silk, and the silk from each of these four corners is knotted at its end into a double knot, while the silk running out backward from the button is tied with a single knot, for the purpose of distinguishing which is which when making the extraction; although practically it will be found that they must



all be made taut and pulled upon all together in order to effect removal with the greatest care and facility.

In the first of my cases I passed a soft bulbous olivary French catheter through the urethra into the bladder and out through the supra-pubic wound, and tied my double silk upon the end of it, and with the silk making traction along the line of the urethra, drew the tampon powerfully down into the funnel-shaped excavation of the prostate, and tied the double ligature over a piece of soft gauze at the urinary meatus upon the relaxed penis.

In the second instance (because the patient also had deep urethral stricture) I made a perineal urethrotomy, and by direct traction through the perineal incision upon my tampon, drew it firmly into place, and tied the strings over a gauze perineal pad.

In both instances the subsequent removal of the pad was comparatively easy, and its effect in carrying out the function for which it was designed manifest and satisfactory.

I have thought of other pads, such as pear-shaped rubber balloons, which might be inflated, and which would be softer, and the removal of which, after collapse, could be more easily effected; but my experience with similar contrivances for use in perineal cystotomy and in the rectum has been so unsatisfactory, on account of the lack of durable quality in rubber goods, that I concluded to rely upon this more modest design, and its satisfactory performance has left me no desire for a better substitute.

Since the reading of this paper I have received the following letter, containing a very practical suggestion, from Dr. Cabot, of Boston.

"3 Marlborough Street, Boston, July 6, 1892.

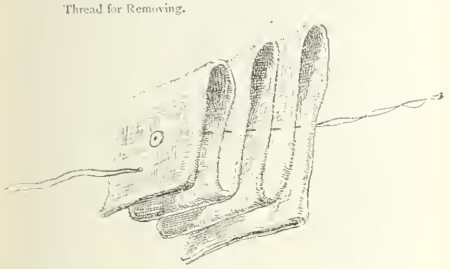
"Dr. E. L. Keyes, New York City.

"Dear Doctor Keyes: I have, since my return from Richfield Springs, had occasion to use the graduated tampon for stopping hemorrhage at the neck of the bladder, that you spoke of there. It was a case where I removed a tumor as large as a small orange, which grew from the bladder-face of the left lobe of the prostate, and from the bladder wall in its immediate neighborhood. The bleeding was very profuse, and was not stopped by injections of hot water. I carried the tampon down, bringing the thread that passed through it out through a wound which I had previously made in the perineum. It answered admirably in stopping all hemorrhage, but I was not quite sure that I did not make it somewhat large, and that it may not have hindered the escape of urine from the ureters somewhat during the first few hours. It

is difficult to say about this, as the urine might naturally be scanty in any event.

"I make a drawing at the bottom of this, of an arrangement which I think might work, and by which I think the tampon might be somewhat easier of removal. It consists in a long strip of gauze, the edges of which could be rolled in and stitched so that there should be no loose, frayed edges, and which could then be doubled in

Thread for Removing.



Thread for Holding in Place.

the way I indicate and run on to the silk to which is attached the button. It could then have another thread attached to the upper end to remove it by. This could be drawn into the neck of the bladder as firmly, I think, as any compress; but on loosening the thread which passes through the perineum and then drawing on the upper thread, it would come out in a long strip, much as the packing which one applies to a bleeding uterus does.

"It seems to me that this has some advantage in the ease with which it could be removed. The compress that I used may have been somewhat thicker than was necessary, but it came out, as they told me, pretty hard. I was not present at its removal, the patient being under the care of other physicians out of town.

"Thanking you very much for this idea, which worked well in my case, I am

"Very truly yours,

"A. T. Cabot."

ROTARY LATERAL DEFORMITY OF THE SPINE IN POTT'S DISEASE.

By JOHN RIDLON, A.M., M.D.,

LECTURER ON ORTHOPEDIC SURGERY AT THE CHICAGO MEDICAL COLLEGE; LATE ASSISTANT SURGEON AT THE VANDERBILT CLINIC, COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK, ETC.

It does not appear that true scoliosis is ever mistaken for spondylitis by surgeons at all familiar with deformities, but the converse of this proposition does not always obtain: Spondylitis readily may, and no doubt often is, mistaken for scoliosis until the progress of the disease or the results of treatment make manifest the error in diagnosis.

Lovett[1] referred to the early and constant occurrence of lateral deviation of the spine in Pott's disease, but did not admit the claim of Bartow,[2] that a true rotary element accompanied the lateral deformity.

Pott's disease, broadly speaking, is a tubercular osteitis or osteo-arthritis of some portion of the spinal column; true rotary lateral curvature, on the other hand, is lacking in all the characteristics of an inflammatory process, and appears as a chronic progressive deformity. Upon this basis the lines of differential diagnosis have been drawn. Objectively, scoliosis presents only its peculiar deformity; subjectively, there are no symptoms until the deformity has reached so great a degree that distant pain is felt from the pinching of the spinal nerves at their foramina of exit on the concave side. In my experience, pain is rarely found in cases where the diagnosis of scoliosis is absolutely certain, though the deformity be very great. Spondylitis, on the other hand, presents all the symptoms, subjective and objective, that go to characterize a tubercular process within, or in the tissues immediately adjacent to, a joint cavity, namely, restriction of normal motion by involuntary muscular spasm, weakness, or disability, and deformity primarily in the direction of comfort, and secondarily in the direction of bone destruction; distant pain is usually present, abscess is met with in very many cases, and paraplegia at times. In Pott's disease the general health is usually, often seriously, affected; in lateral curvature it is unimpaired. In the former the deformity usually looks posteriorly and is angular, while in the latter it looks to one side, is rounded, and is accompanied with a posterior bulging of the ribs on the side of the convexity, and a flattening on the other side. These differences are so great, it would seem that the diagnosis ought to be, as it usually is, very readily made. But cases of Pott's disease occur in which paraplegia and abscess do not appear, and pain is never felt; the kyphosis in very many is rounded, and may involve half or two-thirds of the dorsal and lumbar spine in a sweeping curve; early in the disease, often before the development of a posterior kyphosis, a lateral deviation is found, and this, as in Case I., may progress to a marked deformity before any posterior angle appears, or, as in Case II., the well-marked character of the rotation may obscure the true kyphosis.

Case I. (Figs. 1 and 2).—E. S——, male, eight years of age, first examined March 31, 1891. Good heredity.

Fig. 1, Case I.—Shows lateral deviation and rotation of the spine.

Before commencing to walk had measles and scarlatina; some time later had a fall which was followed by a lame back for a short time. Three years ago had pneumonia, which was not followed by any chronic cough; has always been very erect in his walk. About four weeks ago the mother noticed the spine curving to the right, and since then the deformity has rapidly increased. There is a right dorsal curve extending from the third dorsal to the second or third lumbar vertebra, with rotation; there are slight compensatory curves above and below; the "key note" position reduces the curvature somewhat, but does not wipe it out.

On the diagnosis of scoliosis daily exercises were given, and no corset or brace was applied. The deformity steadily increased, and at the end of six weeks a spring brace was applied; this was worn at night, and the exercises were continued. The deformity continued to increase

[1] Boston Medical and Surgical Journal, October 9, 1890.
[2] Annals of Surgery, July, 1889.

and the spine became more and more rigid, but there was no pain or other subjective symptom. On July 25th the photographs (Figs. 1 and 2) were made, and two days later, the exercises having been discontinued, he was partially suspended and a permanent plaster jacket applied. From this time on the jackets were renewed every six weeks; at each renewal the spine was found more flexible, and the curvature and rotation could be somewhat reduced. When last seen, in May, 1892, very little of either the lateral or rotary deformity remained.

This case was examined by two surgeons experienced in orthopedic work before treatment was commenced; they believed it to be scoliosis, as I did, and only from the results of treatment was the true diagnosis made.

Case II. (Figs. 3 and 4).—E. M——, female, fourteen years of age; first examined September 10, 1891. The deformity of the spine has been noticed for about a year; it has gradually increased, but there has been no pain or noticeable disability. There is a well marked left lateral curvature extending from the mid dorsal to the lower lumbar region, with well-marked rotation (see Fig. 3); this curvature is rigid, and there is a posterior, somewhat

Fig. 2, Case I.—Front view of same.

angular, curvature in its lower portion. There is a flexible compensatory curvature to the right in the upper dorsal region. Movements of the spine in various directions at the point of rigidity are painless.

The diagnosis of spondylitis was made from the rigidity and involuntary muscular spasm on attempted motion in the upper lumbar region; this was in opposition to the views of two general and one orthopedic surgeon who had the opportunity of examining the case. The treatment was by prone recumbency and an antero posterior, inelastic, leverage spinal brace. At the end of two months the lateral deformity and rotation had disappeared and the posterior deformity had been reduced one half. She was then allowed to go about wearing the brace. There had been a slight return of the rotation when last seen, in April, 1892.

From a consideration of the above, it appears to me that the results of treatment verify the diagnosis of spondylitis. The rotation of a true scoliosis would not have been so rapidly corrected, even if it could have been corrected at all. It appears further that the differential diagnosis must depend upon the presence or absence of muscular spasm, rather than upon the presence or absence of pain, or upon the character of the deformity; and in any case where the deformity is in the upper two-thirds of the dorsal spine and the presence of muscular spasm is doubtful, the degree of rigidity of the

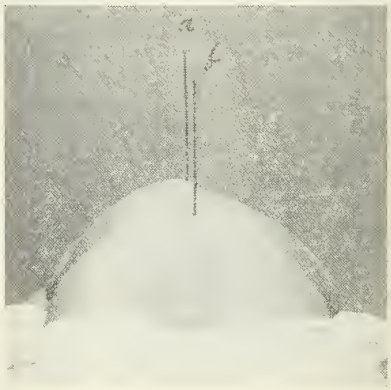


Fig. 3, Case II.—Rear view. Patient stands bending forward to the fullest extent, with finger-tips in apposition and pointing toward the toes. Line *a*, drawn from the tip of the spinous process in the middle of the curvature, and line *b*, drawn from a like point below the deformity, show the extent of the lateral deviation. The extent of the rotation is evident from a comparison of the outline of the back on either side of the line *a*.

curvature, as compared with the duration of the deformity, must receive careful consideration. The deformity of spondylitis rapidly becomes rigid; that of scoliosis only after it has been present for a long time.

Fig. 4. Case II.—Same patient standing. The illustration does not show distinctly the lateral deviation and rotation; on the other hand, it exaggerates the kyphosis.

In cases where any doubt still exists, the carefully observed results of treatment will ultimately decide the matter. Scoliosis, under treatment by forcible redressement and appropriate exercises, will not grow worse, but will usually slowly improve; spondylitis, under the same treat-

ment, will surely, often rapidly, grow worse. Treated by immobilization, the rigidity of the deformity of spondylitis will diminish, and at times the deformity itself grow less; under the same treatment, the deformity of scoliosis becomes more rigid, and the deformity itself is never lessened.

34 Washington Street, Chicago.

AN EXPERIMENTAL CONTRIBUTION LOOKING TO AN IMPROVED TECHNIQUE IN ENTERORRHAPHY, WHEREBY THE NUMBER OF KNOTS IS REDUCED TO TWO, OR EVEN ONE.[1]

This Suture is Applicable in Pylorectomy, Gastro-enterostomy, Anastomosis, Circular and Oblique Enterorrhaphy.

By M. E. CONNELL, M.D.,

Superintendent Milwaukee County Hospital.

Gentlemen, and Fellows of the Brainard: "As the twig is bent, so will the tree incline." Early in my student days, under the guidance of our revered brother member, and I believe the father of this society, Professor N. Senn, now of Chicago, I was led along the paths of experimental work. And in my later years of practice, as you are all aware, he has conducted at our institution many experiments on animals, some of which have attained a world-wide reputation.

Experimental work on the intestines has been a very interesting subject for some time past; some very ingenious ideas and some very complicated methods of enterorrhaphy have been devised, described, and tried; the aim in all cases being, first, to decrease the danger, and, second, to reduce the time.

My thoughts were directed to the suture which I am about to describe through the numerous objections that were raised against the use of plates, in intestinal anastomosis; the principal objections being, in my mind, the difficulty or impossibility of preparing or obtaining them in an emergency, the possibility of gangrene, the narrowing of the anastomotic orifice, and the blind end, or pouch, which is favorable to the formation of an enterolete.

My first step in this direction was a faltering one, though successful, Professor Senn afterward exhibiting the specimen to the students of Rush Medical College. This step consisted in using rubber rings about one or one and one half inch long, with one end cut diagonally, into the lumen of which was served with catgut a narrow tape, and to this tape was attached six sutures of silk. These pieces of rubber tubing were then inserted into the

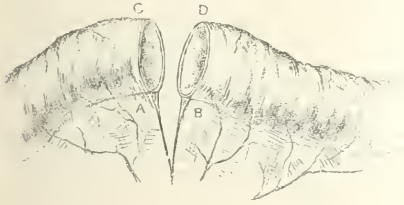


Fig. 1.

lumen of both cut ends of the bowel, the margins of which were inverted over the rubber tubing, and secured to the free end of the tape within the lumen of the rubber tubing, by a continuous suture of fine catgut; then each thread was picked up, divided and tied into position, bringing the serous surfaces in contact.

My aim was a modification of the plate operation, which had been so successful in the saving of time. I thought that with this method we would have a diagonal or oblique enterorrhaphy, with four or six knots, which would be fully as reliable as the Czerny-Lambert, and which could be accomplished in less time

In these experiments when placing the ends of divided intestines in apposition the bowel was given a half twist, so as to bring the mesentery of one cut end in apposition with the convex surface of the opposing end.

After several repetitions of this method, with some modifications each time, I finally rejected it, as too much time was consumed in placing the inverting suture, so as to bring the serous surfaces in complete apposition. My thoughts then turned in another direction, and I concluded to abandon all foreign material, and the result is a suture which seems so perfect in every respect that I deemed it worthy of mention, and this is my excuse for trespassing on your time and attention.

With this suture I have made twelve experiments, always on a dog; ten times it has been successful, and two dogs died. Chinese twisted silk, braided silk, and catgut have been used at different times.

The two deaths above mentioned were owing to a modification of the method, rather than to the suture itself being faulty; and I now have no hesitancy in saying that every dog can be saved. Two knots were used each time but once, and then I thought that it took a longer time to suture with one knot than with two.

As in the plate operation, this suture is very hard to describe in such a way that the hearer or reader may get all the points; but again, like the plate union, it is very simple and easy of execution, when the idea is once grasped.

After the abdomen is opened and the intestine exposed, a resection is made of any length desired, or only

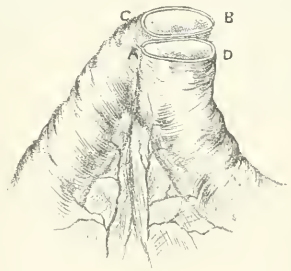


Fig. 2.

a V-shaped portion may be removed. If a resection is made, the bowel is cut diagonally or on the bias from above downward, that is, from the convex surface of bowel to the mesenteric side. When only a V-shaped portion is removed, the base of the V is at the convex, and the apex at the mesenteric side of the bowel, and the mesentery is slit down about one or two inches, as shown in Fig. 1, to allow the proximal and distal portions of the divided intestine to pass by each other, so as to bring the mesenteric side of one cut end in apposition with the convex surface of the other, as shown in Fig. 2 (*A* to *C* and *B* to *D*).

The intestines are held in this position by a thread passed through both ends, by a tenaculum, or by the fingers of an assistant, and the opposing walls are united with two sutures, by one of two methods.

In the first method, the first (or looped) suture is made by inserting the needle, armed with a suture, through the wall of the bowel nearest the operator, about one-fourth of an inch from the margin, at its convex end (*D* or *C*) from without inward, then passing it from the operator, at a distance of about three-sixteenths of an inch, through all coats of both walls which are in apposition, then back again through both walls, not drawing the stitch tight, but leaving it as a loop about one-half inch long, then

[1] Read before the Brainard Medical Society, July 8, 1892, at Oshkosh, Wis.

back again, leaving the stitch a loop as before. This is repeated until the whole of the opposing walls have been embraced in the suture, when with the last stitch the needle is brought from within outward, at about one-fourth of an inch below the margin, through the mesen-

Fig. 3.

teric end of the side on which the suture began (at *A* or *B*). The stitches should be taken about one-fourth of an inch from the margin of the cut bowel, and be about three-sixteenths of an inch in length; the loops may be left about one inch long or a little less, and on both sides of the suture as described above. At this stage the suturing will appear as shown in Fig. 3. These sutured

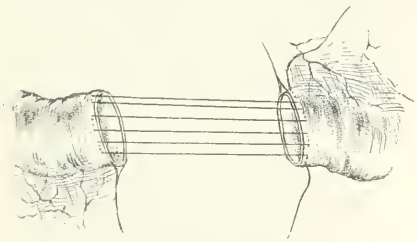


Fig. 4.

walls are next separated as far as the looped stitches will permit, when their relation will be as illustrated by Fig. 4. The two portions or ends of intestine are now turned over, bringing the two ununited walls in apposition.

Laying the loops to one side out of the way, the operator then joins these two walls together, with a suture the

Fig. 5.

same as the first, only that there are no loops, each stitch being drawn sufficiently tight to bring the serous coats into close contact. At this point the work will appear as in Fig. 5.

As the opposing ends of this second suture are drawn taut and held by an assistant, the loops of the first suture are seen to be above. The operator then takes up the ends of the first suture, and, as he draws them gently and steadily, he will be delighted to see the margins of the wound roll into position in a manner that will surprise him. "It slides into place as if by magic," said a bystander, on witnessing the experiment for the first time. The result of the work at this stage will look as in Fig. 6.

The sutures are next tied together at each end, care being taken to see that the mesenteric end is completely inverted; and, if catgut has been used, the knot should be reinforced with another of fine silk over the catgut. The

Fig. 6.

threads should not be cut off after making the first knot, as they are necessary for traction when making the second; after this the loose threads at both ends are cut off close, and the suture is complete.

This same result may be reached without the puzzling "turn" or "roll over" of the intestine, and with but very little difference in time, if the suturing is done as in the following method.

Fig. 7.

The preliminary steps are the same as in the first method, the cut ends of bowel are placed in position as illustrated in Fig. 2, and the first or tight suture is inserted as shown by Fig. 3, with the exception that, instead of leaving loops, all stitches are drawn tight. The work will then look as in Fig. 7.

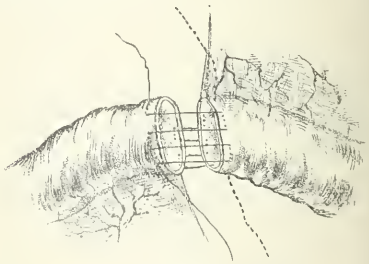


Fig. 8.

In making the second or loose suture the needle is inserted as before, from without inward through the wall of bowel, at the convex end, and passed out again on the same side; it is then crossed over the cut edges to the opposite wall, and a stitch is taken through all the coats about three-sixteenths of an inch in length, parallel with the margin of the cut edges; it is now passed back again, and a stitch is taken as before. This is repeated until enough stitches have been taken, when the needle is

brought from within outward through the mesenteric end, as described in the first method.

When this suture has been inserted, and before it has been drawn tight, it appears as in Fig. 8. The suture can now be drawn taut, when the magical inversion of the everted edges will take place, and the result is the same as that in Fig. 6. The knots should be tied as before described, and I feel that you will be delighted with the final result.

This method of suturing seems to be especially adapted to the removal of malignant growths at the pylorus. What is particularly striking is the fact that no steps to narrow the pyloric end of the stomach are necessary, which is obviously a great saving of time, not to speak of the attending risk.

The pyloric end of the stomach can be cut off obliquely, from above downward and outward, after it has been properly clamped, the length of the opening thus made carefully measured, and the pyloric end of the duodenum cut diagonally to the same extent, and the cut ends may then be sutured by either of the already described methods of enterorrhaphy.

The advantages which may be claimed for this suture are: That there is no foreign material inserted, as in the plate operation; no blind end in the oblique enterorrhaphy to act as a receptacle for waste material which might form an enterolete; the rapidity of the operation, as compared when using the Czerny-Lambert or other sutures; the freedom from danger of obstruction, by narrowing of the lumen, as the opening is diagonal in oblique enterorrhaphy, and in anastomosis it can be of any size, thus giving plenty of freedom for the passage of intestinal contents; and finally, the material for this suture the surgeon has always at hand.

Clinical Department.

THE TREATMENT OF CHOLERA.

By EDMUND CHARLES WENDT, M.D.,

NEW YORK.

[In view of the possibility of a cholera visitation we give the following account of the treatment of the disease quoted from Dr. Wendt's standard work on Asiatic cholera.[1]]

The Treatment of Premonitory Diarrhœa and Cholerine.—Under this and the following heading we propose to sketch such a general plan of treatment as we conceive to be in accordance with our present knowledge of the disease, but which is above all things supported by rational clinical empiricism. This may be profitably supplemented by some account of particular methods or remedies that have received the sanction of authority, or whose claims to recognition have been warmly urged, more particularly during the recent European outbreak.

In the prevalence of an epidemic, the safest rule in practice is to treat every case of diarrhœa, no matter how slight, with the utmost care, and on the principle that it may be premonitory of a grave attack of Asiatic cholera. It goes without saying that the physician must studiously avoid causing unnecessary apprehension, or spreading alarm among his clientèle. Yet by exercising the necessary amount of tact, the families composing his practice may be informed of the urgent necessity of attending immediately to the most insignificant intestinal derangements, that ordinarily might be disregarded.

If slight diarrhœa occurs and is clearly traceable to errors or excess in eating, and if there is reason to believe that undigested food is still irritating the bowels, a mild laxative, such as castor-oil or the usual salts with a little opium, may be safely given. No possible harm can result from a single dose of an unirritating laxative. And even should the sequel show that the case was one of choleraic diarrhœa, the physician may rest assured that the attack was not aggravated by his remedy. No sooner has the laxative produced its effect of removing the offending matters, than any persistence of diarrhœa should be followed by the prompt administration of opiates in small or moderate doses, repeated at short intervals. If there is no distinct evidence pointing to the presence of irritating bowel contents, the preliminary laxative is contra-indicated, and treatment by opium may be at once begun. If the distress is gastric rather than intestinal, an emetic dose of ipecac is a preliminary measure of undeniable advantage. In fact Briquet, Laugier, and Ollive, and quite recently Fabre, commonly employ this drug, and warmly recommend it not only in the premonitory stage of an attack, but also after the disease has actually begun.

Fabre[1] uses it even when grave phenomena already exist, provided the tongue is coated sufficiently to indicate gastric derangement. He remarks that it is surprising to witness the calm that follows the vomiting, to observe the pulse rise, a moisture bedewing the limbs, the cramps cease, the countenance lose its pinched appearance, and the general condition of the patient improve. Saline emetics are, however, universally condemned, and without sharing the sanguine views of the French writer just cited, it may yet be worthy of remembrance that when an emetic is advisable our choice should fall upon ipecacuanha in preference to other similarly acting drugs.

But to resume: A few drops of some mineral acid (nitric, or hydrochloric, but preferably sulphuric) largely diluted with water and taken frequently, may be added to the treatment by opium; not merely in the hope of destroying, as Macnamara and many others believe, "the specific cholera process going on in the intestinal canal," but because it is grateful and slightly astringent, and also for the purely empirical reason that patients have seemed to be benefited thereby.

More important, however, than the use of opiates and acids, even at this early stage, we hold to be the general regimen of the patient. He should be instructed to cease all work at once, if possible to eat and drink nothing for several hours, and to lie down either in bed or on a sofa, preferably between blankets, with a flannel bandage applied over the abdomen. A well-aired room, in which an equable temperature is maintained, should be provided for the patient's occupancy. Bland fluids, such as egg-water or mucilaginous decoctions, also soaked toast, gruels, farina, rice, may be allowed, if after about eight hours of rest and abstinence there is no return of the diarrhœa. Beef tea and all concentrated meat broths should be interdicted, even those prepared with muriatic acid. For several days following a warning of this kind, the patient should be directed to strictly regulate his diet, and carefully avoid all fatigue and nervous perturbation. Should the diarrhœa return after a number of days, he must once more fast and rest as before, and again only gradually venture on returning to his normal diet.

This simple line of treatment is the most rational as well as successful mode of dealing with the mild diarrhœal manifestations that are so frequently seen during the prevalence of an epidemic. It is true that it will not always be possible to induce, for example, an active business man to carry out measures that entail a certain amount of discomfort, and necessitate absence from his "office" for hours or even days. Yet obedience to the above advice should be strenuously urged, and in a large proportion of cases will meet with little or no opposition.

Regarding the preparations of opium, it is best to use

[1] A Treatise on Asiatic Cholera, edited and prepared by Edmund Charles Wendt, M.D., Curator and Pathologist of the St. Francis Hospital; Curator and Pathologist of the New York Infant Asylum; Member of the New York Pathological Society, of the New York Neurological Society, of the Medical Society of the County of New York, etc., etc., in association with Drs. John C. Peters, of New York; Ely McClellan, U.S.A.; John B. Hamilton, Surgeon-General U. S. Marine Hospital Service; and George M. Sternberg, U.S.A. Illustrated with maps and engravings. New York: William Wood & Company, 43-47 East Tenth Street.

[1] Traitement du Choléra. Leçons faites par le Professeur A. Fabre. Marseilles, 1884.

the tinctures, *e.g.*, laudanum or paregoric, in preference to powders, pills, or any of the alkaloids of the drug. In some cases it may be advisable to combine an astringent with the opium, but generally laudanum alone, or in strong peppermint water, is preferable to such combinations. Kino, catechu, and tannin are among the most serviceable drugs when astringents are required.

Macnamara was in the habit of distributing "cholera pills" among the well during the prevalence of an epidemic. Each pill contained a grain of opium and two grains of acetate of lead, the directions being that one be taken every hour until purging stops. It is certainly advisable in times of cholera to have bureaus, offices, factories, schools, and indeed all places where people congregate, supplied with some simple opiate, so that the first manifestations of diarrhœa may be promptly met by appropriate medication. Of course the medicine should be placed in intelligent hands, and each bottle or pill-box must be labelled with explicit directions for use.

For children and very delicate persons paregoric is preferable, as all the spices and aromatics are germicides. Laudanum, if distasteful, may be given in peppermint, or some other aromatic water, of which aq. menth. virid., aq. carui, anisi, allspice, or cloves are not to be despised. In other cases a solution of morphine in acidulated water, or in aromatic water, may be more useful and acceptable.

Dr. Fergus,[1] of Glasgow, had a number of rules drawn up and hung in prominent places of that city, during the prevalence of cholera there. They contain practical suggestions, as applicable to-day as they were then, and are therefore here reproduced, with certain changes that have suggested themselves to the editor.

1. Do not be afraid of cholera, or make it the topic of conversation. Fear and all the depressing passions are injurious.

2. Do not take brandy; it is not a preventive, and it does harm by disordering the action of the stomach and bowels.

3. Do not make any change in your usual diet, if it is simple and of easy digestion; take it moderately, and at regular intervals, as long fasting is injurious. Carefully avoid excess in any intoxicating beverage.

4. Avoid excessive fatigue. If overheated, beware of any sudden chill, and see that the skin is kept comfortably warm. If the disease appears in winter, much benefit may be derived from wearing a flannel belt round the body, covering the stomach and bowels.

5. As soon as cholera appears in a town, a bottle of acidulated solution of morphine, or laudanum, or paregoric, and a graduated measure, should be kept in every house, place of business, factory, or wherever, in fact, there are a number of people gathered together. Persons travelling should always have it with them, easy of access. During the prevalence of an epidemic, one intelligent person in each factory, etc., should take charge of the health of the inmates, acting in the *quasi*-capacity of "house-physician," and urging all under his or her care to at once attend to the slightest relaxation of the bowels. He should warn them that absence of pain does not signify absence of danger.

6. Should the slightest diarrhœa occur, the individual so attacked should receive at once the appropriate quantity marked on the bottle as corresponding to his age. The person attacked should be at once considered a patient, and conveyed home, placed in bed, and kept warm. If chilled, warm water bottles should be put to the feet. If the first dose of the "cholera mixture" has not checked the looseness, the patient should take a second after an interval of from one-half to one hour. A flannel cloth dipped in turpentine or essence of peppermint may also be placed all over the stomach and bowels for from forty minutes to an hour; or a large, soft, warm poultice of linseed meal and mustard for one or two hours. Medical assistance should be summoned if the diarrhœa has not promptly yielded. In the meantime a third and last dose of the medicine may be taken, one or two hours after the second one.

7. It is well for the patient to remain very quiet, preferably in bed, for two or three days after the diarrhœa is checked. This is to be strongly urged, for the patient often feels so well that he objects to remain in bed.

8. To relieve thirst, a piece of ice may be given, or a mouthful of iced water, or plain soda-water. In some cases even more fluid can be taken at a time; but it should then be directed by the physician. All food should be abstained from for from fifteen to eighteen hours after the medicine has been taken. Afterward the diet should for two or three days consist of such food as rice, sago, arrowroot, Indian corn flour, tea and toast, and similar bland substances. About the third day broths, chicken-soup, or beef-tea may be taken. Condiments, such as pepper, salt, cinnamon, etc., are useful. Green tea is more astringent than black.

9. *These rules are for the first stage, and for it only, namely, the diarrhœa.* If a person has neglected the first warning, and is in the second stage, having cramps, vomiting, and stools like rice-water, without smell, the patient should, until medical assistance arrives, be placed in bed between blankets and surrounded with bottles of hot water. He may receive a little ice or an occasional mouthful of cold water. The limbs may be rubbed, but not too violently, with some liniment, quickly procurable.[1] No medicine is to be given until the arrival of the doctor.

If the invasion of cholera is not preceded by the mild manifestations of simple diarrhœa, but begins at once with watery purging, the above plan may require certain modifications and additions that must necessarily again vary with the abruptness and severity of the onset. In order to insure quiet, overcome pain, and perhaps quickly influence the bowels, it is best to administer hypodermically from six to fifteen minims of Magendie's solution of morphine. If it be found desirable to maintain the action of the drug, laudanum in spice water, or paregoric, may then be used. But should the stomach prove rebellious to the laudanum, hypodermics may be from time to time repeated, the quantity being adjusted to the varying indications of the particular case, but rarely again reaching the maximum of the initial dose. Bed-rest is absolutely necessary now, and indeed, as a rule, the patient's general malaise will not incline him to disobey orders. It is advisable to place a large poultice made of equal proportions of ground mustard and flaxseed meal over the entire abdomen, and after decided reddening of the skin, replace it by ordinary poultices, opium liniment on cotton flannel, warm flannel alone, or simply a hydropathic bandage, fitting snugly but not uncomfortably around the abdomen.[2] The latter especially often gives the patient a sensation of grateful ease that it is very desirable to maintain.

Vomiting may still be absent, or, when present, it may be possible to restrain or suppress it by allowing small bits of cracked ice, cold champagne, or simple water charged with carbonic acid. Drop doses of the wine of ipecac, or one- to three grain doses of oxalate of cerium, may likewise aid in controlling the vomiting. If the patient now grows very thirsty, there is no objection to allowing him to drink plain water, that it is well to have previously boiled, then cooled, shaken, and iced. Claret or small quantities of brandy or whiskey may also be added to the water, but need not be forced upon the patient. It does not seem advisable to allow the imbibition of large quantities of liquid at one time. Small quantities given at short intervals answer much better. Any attempt to prevent collapse by using large quantities of alcoholic stimulants is decidedly reprehensible.

Small quantities of tea-punch, hot or cold, preferably hot, made of green tea, arrack, or some other nice light spirits, to which the rich can add champagne, makes a

[1] If there is time, an opium liniment may be made with one or two ounces of laudanum, one ounce of soap liniment, and an ounce or two of cologne water. It is very efficacious and agreeable.

[2] Flannels wrung out in hot cayenne pepper water are also useful.

light and digestible drink which will warm without overstimulating. Vermouth wine, which is merely a light white wine flavored with aromatic and slightly bitter herbs, is excellent. Sour and Rhine wine is better than heavy sherry, which should not only be pure, but diluted with water; ten per cent. of alcohol is as strong as any wine or diluted spirits should be used (Peters).

Although cholera patients, as a rule, crave cold fluids, it is nevertheless worthy of remembrance that, in some cases, hot weak tea, or peppermint water, or simply very hot water, is borne better than iced drinks, and may be used in place of them. In this connection it is perhaps deserving of notice that Macnamara and several other competent writers urge abstinence from all fluids. They rely solely on the use of bits of ice, allowing the patients an unlimited supply of this cooling substance. On the other hand, Macpherson,[1] from his own experience in one of the severest cases of cholera on record which recovered, says he will never deny a cholera patient a reasonable amount of water, either plain or carbonated.

Any other symptoms arising at this period call merely for cautious treatment directed toward their mitigation, but all "meddlesome interference" is very much to be deprecated. Nothing seems to the writer's mind more irrational than to attempt, by potent and varied drugs, frequently given in large quantities, combined with the use of harassing external measures, to do battle against a foe that in many cases is clearly beyond the reach of all treatment.

The following table is based on 800 cases of cholera treated in the provinces throughout England and Scotland, in 1854, and represents the percentage of failure, after the use of various remedies in premonitory diarrhœa:[1]

	Per cent.	Or, including deaths as failures.
Catechu, kino, etc	59.0	59.0
Salines	41.9	41.9
Eliminants	25.0	25.0
Calomel	34 0	25.3
Calomel and opium	18.9	22.0
Stimulants	16.0	21.8
Chalk and opium	13 8	17.1
Acetate of lead and opium	11 2	14.0
Opium	8 6	13.7
Chalk mixture	3 6	5.0
Sulphuric acid and opium	2.6	4 0

Having thus briefly outlined the simple management of premonitory diarrhœa and cholerine, we will next turn our attention to the treatment of well-marked cholera.

(To be continued.)

[1] General Board of Health. "Report on the Results of the Different Methods of Treatment, by the Treatment Committee of the Medical Council, 1855.

ABORTION IN AN HOUR.

By CHARLES H. HARRIS, M.D.,

CEDARTOWN, GA

THE difficulties encountered in the treatment of abortion are so well known that it is unnecessary to name them. The experienced physician has met with these cases in every stage of development, from the neurotic prodromata to the emptying of the uterus and its subsequent involution. Mild forms of the accident rarely come under our observation, as they transpire without exciting any alarm. Women do not take their beds for them. Indeed, it sometimes happens that they are themselves unconscious of their condition until they notice that "something has passed" from them. As a rule, it is only the bad cases that call on us—such cases as are attended with great suffering or danger. There is a reason for this tardiness on the part of the women in seeking our aid. Reduced to its last analysis, it means our objectionable management of them. We do not please them in this line of practice. The older doctors are painfully aware of this fact. They call upon us for relief, and we do what we can—perhaps tent the cervix and tampon the vagina—and tell them to be patient, that in due time everything will happen all right; or, if the case will admit of it, we rapidly dilate, curette, and extract as best we can with the usual instruments. It is this dallying conservatism and rough handling with uncertain results too well known to the women—that keep them aloof from us until they are driven in from the desperation of fear. Is it any wonder when we review the results of our work? The death-roll and wrecks of womanhood along the line of our march, justify their evasion of us, and we admire their wisdom. Along with other attractions the women have sense, and they know how to use it. Had we impressed them with our skill, things would have been different. Did they know that we could relieve them in a few moments, or at most in an hour, we would gain their confidence, and the field of accidental abortion, as yet barely touched, would be fairly ours.

That any case of abortion in which an operation is admissible may be brought to a finish in an hour, and on the first visit, I deem not only possible but eminently practicable. If we find the cervix dilated or dilatable, a few minutes will suffice. Should we find it rigid, narrow, and unyielding (a rare exception), it requires more time, patience, and perseverance to overcome this difficulty—not, however, more than an hour. This contingency is met, as we will directly understand, by means similar to obstetric forceps, and the dilatation goes on *pari passu* with the processes of detachment and expulsion. The instruments used are not forceps and dilators. They are combination curettes and snares, made expressly for the operation, and are adjustable in utero. They are of steel round wire, and flat, stout watch-spring. With little difficulty they may be made to pass the cervix of any pregnant uterus, and at the will of the operator project inside of the organ a curette or snare suited to the work. They are so slender as to practically occupy no space at all, since they become embedded in the mass of the ovum. Having observed the rules of antisepsis, the operator passes the smallest loop of snare No. 1 fairly within the uterus. This done (with average skill), he should be master of the situation. If nervous, the patient should have been chloroformed and in Sims position. His task is now almost purely mechanical, viz., to detach, chop up into small fragments, and remove the ovum. This is done by curetting and snaring. Curetting requires small loops of wire, and should be thorough and rapid. Snare No. 1 having been passed into the cavity of the uterus, its loop is now enlarged an inch (twice the size of the thumb nail) and the instrument is urged on to its work of destruction. The attachments of the placenta are rapidly severed and the staff of the snare made to sweep around the globe of the ovum. To make assurance doubly sure, enlarge the loop another inch and scrape the uterus as you would a mortar with a thin spatula. Should the membranes survive this ordeal they should now be ruptured. Draw the wires back through the staff so as to make a small loop at its terminal end in the uterus. Now aim the small loop toward the centre of the ovum and plunge it into the mass. Failing in this, Snare No. 2, with small loop, should be passed into the uterus and the membranes are easily ruptured.

A better instrument cannot be devised for this purpose. An eminent gynecologist says, "it is between a dull and sharp curette, and will take the place of both in many operations." Having ruptured the membranes, the work of snaring begins. For snaring purposes a large loop of round wire is best. A large loop of snare No. 1 is sprung in the uterus, and is kept moving until it hangs upon the ovum. Now pull with forceps movement and steadily increasing force. There will be several results from this traction. It is the best, surest, safest, and quickest way of dilating the cervix. It is a perfect uterine tampon. It will either extract entire or else divide the ovum, reducing its bulk and avoiding the necessity of

largely dilating the cervix. The finest result, however, from this traction is its remarkable effect on the uterus. Through reflex agencies beginning in the cervix contractions follow, and we invoke the best efforts at expulsion. It is this vigorous co-operation of the uterus which simulates so closely the typical abortion of a healthy woman. Should the wire cut its way through the structures of the ovum, it should be reintroduced and the snaring continued until the mass in utero is reduced to small fragments and extracted. The snares have a traction-power of over a hundred pounds, which is amply sufficient for the work.

To complete the toilet of the uterus, snare No. 2 with flat watch-spring is passed with small loop. Enlarge the loop until it presses well on the uterine wall. Pressing upward, the snare is rotated backward and forward on its terminal axis until it works smoothly. This scrapes off

Fig. 1.—Showing Snare No. 1 with Small Round Wire.

Fig. 2.—Showing Snare No. 2 with Flat Watch-spring.

the residual placenta, which, with the detritus of the ovum, is removed by passing the loop into and out of the uterus until the fragments cease to appear in it. It only remains to swab out the organ with a styptic antiseptic, and irrigate the vagina with sterilized water.

In this operation the surgeon does all the work. Nothing is left to nature or accident. It applies to the first three months of pregnancy, before the structures of the fœtus become toughened and hardened by ossification. The author is well aware of the magnitude of the task he has undertaken. Reforms in medicine are slow, and when they assume the dignity of revolution, as in this operation, they are met with bristling opposition from every quarter. It has been our purpose to place the operation for abortion where it has never been, among the certainties of surgery. Along with this we hope to capture a field of practice for the profession, which, as yet, has been barely touched. A doctor will not permit a woman to remain in labor for days without relief, and it will be equally culpable, when this operation is understood, for him to allow a case of abortion to drag its weary course along through days and weeks, as heretofore. More than this, he will be held accountable if he does not relieve his case on the first visit.

AN EXTREME CASE OF SUSPENDED ANIMATION FROM CHLOROFORM RESUSCITATED BY DIRECT INSUFFLATION IN THE INVERTED POSITION.

By A. E. PRINCE, M.D., Ph.D.,

CONSULTING OCULIST FOR WABASH RAILWAY, ILLINOIS STATE INSTITUTION FOR DEAF AND DUMB, ILLINOIS STATE INSTITUTION FOR THE BLIND, ETC.

On July 22, 1892, chloroform was administered to Mr. John P——, aged twenty-eight, for the purpose of opening the mastoid cells for a supposed abscess. The gentleman had a heart murmur, but it was believed that the administration would be unattended by especial danger, particularly as he had, within a few weeks, taken chloroform for another operation. No difficulty was at first experienced. Anæsthesia was rendered complete, and the operation was begun, but in a short time circulation and respiration were suspended, and the patient became livid.

The function of which organ failed first is not known, but, from the fact that there was no pulsation at the moment of the discovery of the arrest of breathing, and that the dark color followed so quickly, it is presumed that the case was one of heart failure; which is also rendered probable by the existence of heart lesion, which was recognized.

No time was lost in temporizing, but resort was had at once to the inverted position. The man was suspended by the flexed knees from my shoulders, and subjected to a trotting motion around the operating-room. A description of this procedure will be found in the "Transactions of the Illinois State Medical Society, 1890," and in the New York *Medical Journal*, August 22, 1891.

This inverted position, with a jolting motion, was continued while my strength lasted, after which I stood still, and my assistant practised the Sylvester method, the body being still inverted and suspended from my shoulders. No response followed, and he was placed on the table; to all appearances he was dead. The skin was blue; a hasty auscultation revealed no signs of pulsation. Hemorrhage had ceased, the last blood being of a very dark color. No time was lost, but the patient was again lifted to the shoulders of my assistant, by whom he was trotted around the room for about one minute. At this juncture the account of the infant resuscitation by blowing directly into the mouth, published by Dr. W. E Forest, in the Medical Record of April 9, 1892, entered my mind, and I called a halt, knelt down, took a deep inspiration, joined my mouth with that of the patient, and emptied the contents of my lungs into his.

The chest expanded, and the diaphragm, with the weight of the intestines, was raised, and I doubt not but that the flaccid heart was emptied of its passive blood.

Immediately the weight of the intestines and the elasticity of the chest forced a complete expiration. This was followed by another and another, until I could see that the lividity of the lips was less, though the ashen hue of the countenance persisted. A moment was taken to auscult the heart, but no sound was discerned. The artificial expansion of the lungs was resumed, and continued for about three minutes, and we noted with gratification that the color of the lips continued to improve.

An interval was allowed for auscultation, but no effort at natural pulsation or respiration was detected. Again the inflation was resumed, and continued at the rate of about twelve in the minute, for about two minutes, when the gratification was enjoyed of hearing the first natural effort at respiration.

After a little time the patient was placed on a table, and the operation finished under ether anæsthesia.

This is the sixth case of suspended functions which did not respond to either the Marshall-Hall method or the Sylvester method, the first five of which recovered under suspension treatment. Without this, I am convinced all of these would have been lost. The foregoing is the only one that did not respond to the suspension method, and I am under unutterable obligations to Dr. Forest for paving the way to the employment of the direct inflation in the inverted position of the body.

SPRINGFIELD, ILL., August 24, 1892.

REPORT OF A CASE OF EXTENSIVE PISTOL-SHOT INJURY OF BRAIN—RECOVERY.

BY O. O. COOPER, M.D.,

HINTON, W. VA.

MAY 28, 1892.—Carl H——, healthy boy, aged fourteen, was accidentally shot with a 32-calibre pistol at a distance of eighteen inches, the ball entering just above the inner canthus of the right eye and passing through the thin wall of the orbit. There was marked effusion over the right occipital region, the scalp floating from the cranium, and it was thought a fracture could be detected at this point. There was great œdema about the right eye and some about the left, but there was no ecchymosis of the conjunctiva. Pulse, 90; respiration, 18, and shallow; complete coma and left hemiplegia.

Diagnosis.—Bullet passing through right hemisphere of the cerebrum from front to rear, cutting off by the wound and the pressure of the hemorrhage most of the fibres from the motor area, and probably lodging in the occipital bone, which it fractured.

Prognosis.—Four physicians who saw the case said the injury would, without doubt, prove fatal.

Treatment.—Trephining was not done, nor was probing practised, except to introduce in the track of the bullet for two inches a strip of iodoform gauze for drainage.

Progress of the Case.—After eight hours the coma became less profound.

May 29th.—The boy could be aroused by considerable effort. Temperature, 101° F.; pulse, 100; breathing normal.

May 30th.—Fresh strip of gauze inserted. There was delirium and incontinence of urine, but the patient was able to swallow a small amount of liquid nourishment; temperature, 99½° F., above which height it did not afterward rise. Pulse, 102, rather feeble. I was able now to make out complete left hemiplegia, including the tongue and face, and complete hemianæstbesia.

June 1st.—No discharge from wound. The boy was wandering in speech.

June 3d.—Talking rationally, able to count fingers with either eye; voiding urine naturally; no elevation of temperature; complete paralysis and loss of sensation of the left side persist.

June 5th.—Pin prick felt in the left leg, but not in the arm. Effusion under the scalp greatly diminished, and a projecting body can be felt at right superior angle of the occipital bone. This was supposed to be the bullet. An incision was made under cocaine with antiseptic precautions, and the bullet extracted by using some force; the jagged splinters of its base were fastened in the skull. Several drachms of dark fluid blood escaped, after which the incision was tightly closed with catgut. The patient felt no discomfort from the operation.

June 18th.—Wounds of entrance and exit completely closed, there never having been a drop of pus in either. Sensation everywhere present, beginning motion in the left leg, none in the arm.

July 10th.—Motion in the leg is improving, and the deltoid and triceps of the arm are beginning to act.

August 28th.—Three months after the injury the boy is walking around town without a cane, using all the muscles of the thigh and leg except the antero-tibial; he is able to flex, extend, pronate, and supinate the forearm; flexes the fingers, but does not extend them; the tongue deviates to the left, the face is paralyzed on the left side; but sensation is only slightly impaired on this side; vision of both eyes is perfect; the reflexes are greatly exaggerated; the mind is clear, and there are no headaches.

Remarks.—Trephining was omitted for these reasons: The conditions were not good for a perfectly aseptic operation; the location of the bullet was by no means certain, as the effusion under scalp could have resulted from the fall after injury; it was not thought the patient would survive the operation, and it is more embarrassing to have patients die on the table in private than in hospital practice, especially with an ignorant clientele. I believe the case worth reporting. The recovery from a wound of the brain, involving the whole length of the hemisphere, and without surgical interference, is certainly unusual.

PECULIAR VASO MOTOR DISTURBANCE AFTER THE ADMINISTRATION OF PHENACETINE.

BY W. K. TINGLEY, M.D.,

NORWICH, CONN.

HAVING recently had three cases under observation where the symptoms were almost identical, I think them worthy of mention.

Mrs. E——, perfectly healthy young married woman, subject to migraine, can take phenacetine alone without symptoms or disturbance of any kind, but when champagne is taken, even after an interval of some hours, the following phenomena appear: The face becomes flushed, the eyes suffused, conjunctival vessels dilated and of a bright red color. At first the face is flushed equally, but after a time white spots appear, so that there are patches of white and red scattered irregularly over the face, neck, and chest. The head feels full, and the temporal vessels pulsate visibly, with considerable enlargement of the veins of forehead; sometimes vertigo is present, at others not. These symptoms last from two to four hours.

Mrs. C—— suffers in exactly the same manner, with the exception that the conjunctivæ are not affected.

The third case is in a young man, aged thirty, perfectly strong and healthy. If he takes champagne after phenacetine, his face becomes deeply flushed, the conjunctivæ are injected, and the head feels tense and full, with considerable vertigo. After twenty minutes or half an hour the face becomes somewhat mottled in appearance, especially on the forehead. In his case the eruption does not extend below the neck.

These cases seem to me peculiar from the fact that it is only champagne or other sparkling wine that produces the symptoms. All three of the patients can take phenacetine alone, or combined with whiskey, brandy, or claret without any discomfort, while one or two glasses of champagne starts them on this most uncomfortable round of vaso-motor disturbances.

Food Adulteration.—Ninety million dollars worth of stuff used in the adulteration of food is sold annually in the United States. At least so says a writer in the Philadelphia *Star*, who claims to have looked the matter up.

Cremation in Time of War.—The Paris Cremation Society recently addressed a petition to the French Minister of War, praying him to issue a decree making the cremation of the dead bodies of soldiers killed in battle compulsory as soon as possible after the action. The petitioners express the belief that such a measure would prevent, or at least largely mitigate, the epidemics which under present conditions are so apt to break out in countries which are the seat of war.

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THE PATHOLOGY AND TREATMENT OF GOUT.

IT is certainly true that the English physicians bow down to and worship the uric acid crystal to an extent beyond that of other races. Cullen, to be sure, once advocated the neurosal theory of gout, and so, more recently, has Dr. Duckworth; but all the systematic English writers are thoroughly impregnated with the uric acid pathology. We are not prepared to deny that this view is the correct one; still the teachings of modern pathology lead us somewhat to doubt the possibility of an acute inflammation being set up by a deposition of uric acid crystals. Ebstein's theory, that this deposition is secondary to a local necrosis, surely deserves and has aroused attention; while recently in this country Herter has made some studies which tend to the conclusion that the uric acid deposit is an effect, or symptom, rather than a cause.

Accepting, however, the chemical and mechanical theory of gout, there could be no more interesting contribution to this subject than that furnished by Sir William Roberts in his Croonian lectures, to which we have already referred. Dr. Roberts is a firm believer in the view that gouty manifestations are the result of deposits of urates in the various joints and tissues. His concern is, therefore, to find out where and why these deposits are made. He says: "The tissues which are liable to uratic precipitations are not equally so in the different parts of the body. The cartilages, ligaments, and tendons in and about the joints, which are bathed with synovia, are much more obnoxious to these deposits than are cartilages and fibrous structures situated at a distance from joints, and which are not bathed with synovial fluid. It is further to be noted that uratic deposits favor the more superficial and cooler parts of the body, especially the upper and lower extremities, and are more rare in the deeper and warmer interior parts of the trunk. It may be inferred from these particulars that the influences which co operate to determine the site of uratic precipitations are of several and quite different kinds." One of the influences thus predisposing to uratic precipitation is the amount of sodium salts in the particular tissue, and Dr. Roberts finds that in places where the percentage of these salts is highest the precipitations oftenest occur. Thus brain has only about one-fourth the percentage of these salts as compared with cartilage and fibrous tissue, and muscle only one tenth. This difference signifies (roughly) that brain has four times more power, and muscle ten times more power, of dissolving sodium biurate than cartilage and fibrous tissue, and therefore, respectively, four and ten times more power of resisting its precipitation in their substance. It might probably be truthfully said on this ground that brain, muscle, liver, and spleen could not become the sites of uratic deposits until the connective tissues had been in this respect exhausted.

A second potent influence in causing the precipitation of urates is the synovial fluid. The connection here, according to Dr. Roberts, is very close and special. Synovial fluid has itself been repeatedly found heavily laden with crystals of sodium biurate. In the great majority of the less severe cases of gout the deposits are exclusively confined to those cartilages, ligaments, and tendons which are in actual contact with synovial sacs or synovial sheaths. With regard to the articular cartilages, it may, he thinks, be demonstrated that the uratic precipitation actually takes place from the synovial fluid, and is not self-originating in the cartilaginous substance. Vertical sections of gouty cartilages are very convincing on this point. If such sections are examined under the microscope, it is seen that the deposit hugs the synovial surface of the cartilage, and that it becomes progressively sparser and sparser toward the deeper layers, the central and deepest parts being usually quite free from deposit.

The pathology of all gouty manifestations is best explained by the lecturer on the mechanical theory alone. Joints, nerves, and other tissues are irritated by the deposits of uric acid. This explains all.

Coming to the subject of treatment, Dr. Roberts says, regarding diet: "Gouty people should be advised to partake cautiously of butcher's meat, fowl, game, and cheese, and to partake as freely as their digestion will permit of bread, rice, garden vegetables, salads, and fruit. The advantage to be gained from an adjustment of the dietary on these lines may be inconsiderable, or even inappreciable, in cases of inveterate gout, but it may be of critical moment in the slighter cases. A diminution of one or two grains per day in the amount of uric acid thrown into the circulation may make all the difference between the occurrence or non-occurrence of an arthritic attack."

As to the use of alcohol, the lecturer is conservative, but does not entirely forbid it. He advises the very moderate use of table salt. Regarding the use of alkalies, he takes a somewhat surprising position. He states that the view that in gout there is an "acid dyscrasia," and that alkalies are indicated, is "a pure assumption." He has found experimentally that the addition of carbonate of lithia or piperazine, in the proportion of 0.1 per cent. and 0.2 per cent. to blood serum or synovia, had not the slightest effect in enhancing the solvent power of these media on sodium biurate, nor the slightest effect in retarding its precipitation from serum and synovia artificially impregnated with uric acid. If these bodies have any beneficial action in gout, it is certainly not due, as has been supposed, to their solvent action on the material of gouty concretions. He advises drinking copiously of pure water (eight to ten tumblers daily), avoiding mineral waters with sodium salts. This seems to be all that is required.

INCREASED QUARANTINE FACILITIES.

While much inconvenience and suffering to quarantined passengers has been occasioned by want of accommodations for transfer, it is quite evident that the Health Officer has done his part as best he could under the circumstances. The sudden emergency has not only proved what can be done in protecting the city against a continuous and formidable invasion of disease, but has demonstrated certain defects in our present system which have never before been so strikingly manifest. In other words, the very strict manner in which the quarantine has been enforced has proportionately emphasized the necessity of increased facilities for the care of infected passengers. Unfortunately, the Health Officer, in the stern and conscientious discharge of his duty, and in the assumption of the various responsibilities which made such a task possible, has been the subject of much unmerited criticism and much unwarranted abuse. Thus, while tendering him hearty congratulations, we can consistently give him our sympathy. While keenly alive to the necessities of the occasion he was powerless to meet them, for lack of facilities in sudden emergencies. Quarantining the passengers was one thing, but transferring to places when none such were provided was quite another. The responsibilities were great, but were promptly met, and it is principally due to his energy and foresight that the quarantined passengers are even now properly cared for.

As might have been anticipated, the emergency of the occasion brought many helpers to the front, the general tendency of whom, although dictated in a proper spirit, was as much to thwart as to assist. In the midst of this grave concern for the ultimate safety of millions, the Hamburg steamers, chiefly accountable for the trouble, manifested an appalling helplessness and inexplicable apathy.

Indeed, were it not for the prompt action of the Federal Government and the Governor of the State, we would be at a loss to conjecture the extra amount of suffering which the imprisoned passengers would have been forced to endure.

The public-spirited action of Mr. Pierrepont Morgan, in promptly purchasing a steamer for the use of the sufferers, will not be forgotten by those who were the recipients of his noble generosity.

The lesson of the hour was quickly learned in the establishment of a new quarantine camp at Sandy Hook and another at Fire Island. So far we have reason to be well satisfied that the present provisions appear to be ample for any possible emergency.

The Health Officer, properly appreciating his responsibilities, called to his assistance such distinguished bacteriologists as Surgeon George M. Sternberg, of the Army, Professor Herman Biggs, of the Carnegie laboratory, and stationed Dr. Byron at Swinburne Island, also increasing his staff by such deputies as were needed. The judgment displayed in the selection has been verified in the good results of the skilled counsel thus obtained.

Offsetting this was the usual volunteered advice, which was none the less harassing though well meant. The threatened antagonism of authority in the appearance of an executive medical officer from the Marine Hospital Service, was, from many points of view, an evidence of mistaken zeal in a good cause. In one sense it was a serious reflection upon the ability of the Health Officer to discharge his duties, and in so far conflicted with the true spirit of the State law. Either the Health Officer is what he should be, or he should be removed. As it is, however, he has shown himself equal to his responsibilities, and while we must not question the good intentions which prompted the offer, we can protest against the means used to such an end. We are glad to learn, however, that matters have seemingly adjusted themselves so that the proper executive authority is centralized where it belongs. Dr. Jenkins has shown himself ready and willing to receive advice, but he must be at liberty to accept it or not, as he may deem necessary for the proper discharge of the responsible duties of his office.

THE EMANCIPATION OF THE DOCTOR.

One of the services which the medical profession of this city has done has been to emancipate its members from many of the needless and narrowing conventionalities of the past. There was a time when a doctor had to set himself apart; he was obliged to wear a black coat, a professional air, and refrain from dancing and all other social frivolities.

Not long ago, says the *Sun*, a Boston physician of eminence wondered how the New York doctors could dare to go to their clubs during the day. If he were seen entering the Somerset Club in Boston in broad daylight, he said, his practice would suffer disastrously. Under such stress the doctor was obliged to carry his profession everywhere with him; he could be a doctor and nothing more. In Washington, and probably other cities, the physicians dare not be seen riding a bicycle or doing anything else savoring of ordinary human enjoyments. This city has certainly, more than any other, broken loose from this thraldom. The doctor has to study harder, work harder, be more alert and wise and skilful than ever. But if he is known to be thus industrious and skilful, he is allowed as much personal freedom as any one. The change is vastly for the better. The time is going by when "a good bedside manner" is the essential thing. The physician now must, above all things, understand his profession, and know how to deal with human nature. True, he can ride a bicycle, wear a sack-coat, russet shoes, and go to a club, if he is rich enough for such luxuries.

THE NEW CURE FOR NEURASTHENIA.

It has been found in France, and the sheep furnishes it. Our interesting congener, the pig, who has been doing wonders in a peptic way for the neurasthenic's stomach, now has a rival that is forced to give its head to nervous exhaustion. Gray matter from the sheep's brain is cut into bits, macerated, put into five times its weight of glycerine, and subjected to other process, all of which is detailed in the *Bulletin del'Académie de Médicine*, No. 7, 1892, until a filtrate is produced for injection into the abdomen of the nervously weak. About seventy-five drops of the filtrate, which is called "nervous matter," constitutes a dose. And the method of treatment is known as nervous transfusion. One Constantin Paul discovered it, and "tranfused" eleven persons with sterilized ten per

cent. solution of gray matter from the sheep's brain, without abscess or pustular acne supervening. In all these cases there was either cure or great improvement. Three were classic neurasthenics, three others neurasthenic chlorotics, one was a case of chronic bradycardia, and four suffered from locomotor ataxia. Muscular weakness rapidly disappeared under this treatment; pain and sensitiveness in the back grew less; headache, insomnia, functional brain weakness, were all exorcised after few or many injections of the new filtrate. This nervous matter must certainly be taken with a grain of salt to aid osmosis. Meantime, discoverers like Brown-Séquard and Constantin Paul deserve one good opinion of great value to themselves—namely, their own.

THE TREATMENT OF HEART-FAILURE FROM CHLOROFORM.

The *International Medical Magazine*, July, 1892, quoting from a German journal, gives Maass's description of a method in use at the Göttingen Clinic by which the heart can be made to resume its action after apparently fatal paralysis from chloroform. Rapid impulses are given to the region of the heart by the hand of the surgeon, as many as one hundred and twenty a minute. The operator stands at the left side of the patient, laying his right hand on the left side of the chest and placing the ball of the thumb half-way between the apex beat and the sternum. The left hand is applied to the right side of the chest and steadies. The rapid compressing motions are made with the right hand. Two patients have been revived by this method perseveringly applied for half an hour or more, after their restoration seemed hopeless. Heart contractions ceased whenever compression was interrupted, though shallow respirations continued spontaneously.

CHOLERA AND QUARANTINE.

That cholera appears in New York simply proves that the strictest quarantine cannot always guarantee safety. While we may have good reason to be satisfied with results up to the present we must recollect that in spite of the best of systems the dreaded disease may surreptitiously find an entrance into the city. It is unnecessary to allude to the many ways by which this may be accomplished. We have before referred to the different avenues through which the city may be approached other than by those of quarantine.

In cases of invasion it is natural to blame the health officer. Before doing so it would be well to examine thoroughly into the history of the first cases, and see where the responsibility truly rests. Very often the pestilence sows its seed before its appearance in infected ports is reported and the necessity for quarantine is made apparent. All these conditions have to be considered in explaining the fact that quarantine, as ordinarily enforced, fails in about seventy per cent. and succeeds only in thirty.

A Corner on Vaccine was brought about recently in Moscow, and in view of a threatened epidemic of small-pox the price of the virus was increased some thousand per cent.

News of the Week.

Cholera in New York.—On Wednesday of this week it was officially declared by the Health Department that Asiatic cholera was present in New York. There were five deaths. The first case occurred September 6th, and the last on Tuesday. The announcement was delayed until a positive diagnosis was made by the discovery of the comma bacillus in the dejecta. The health authorities have as yet no definite knowledge of the way in which the plague entered the city. The infected houses have been properly quarantined since the first appearance of suspicious symptoms in the cases.

Cholera in India.—A correspondent of the *British Medical Journal*, July 9, 1892, writing from Srinagar under date June 11th, states that the epidemic there began on May 6th, and that there had been over eight thousand cases and five thousand deaths in Srinagar alone, out of a population of one hundred and twenty-four thousand, and at least fifteen hundred deaths in the district. Srinagar is one of the filthiest of cities, has neither drains nor latrines, nor any real system of conservancy. Arrangements have already been made to introduce a pure and protected water supply. Advantage will be taken of the recent destructive fire to rebuild the burnt-out area on sanitary lines, and efforts are being made to introduce a proper system of conservancy.

The Number of Deaths from Cholera in Russia, up to September 1st, has been officially placed at about one hundred and sixty thousand. Adding to this upward of forty thousand deaths in other parts of the Continent, we obtain a total of two hundred thousand victims in Europe alone There is no doubt that these figures are much below the actual number, for the official returns are universally acknowledged to be incorrect. How many have perished in Central Asia will never be known.

In Hamburg the epidemic is reported to be decreasing, and people are beginning to appear again in the streets and to frequent the cafés. There is, however, a terrible amount of suffering among the poorer classes. Commerce has been almost entirely suspended, and, in consequence, great numbers of laboring men have been thrown out of employment, and unless relief is quickly furnished it is feared that there will be rioting in the city.

The Port of Colon, on the Isthmus, has been closed against all vessels from Europe, and also from any other place where cholera may exist. It is not known whether the authorities there will look upon New York as an infected port or not.

Precautions Against Cholera in Boston.—The City Board of Health has taken active measures to prevent the importation of cholera and to take charge of it should it appear. The Mayor has recommended a twenty days' quarantine for all vessels carrying steerage passengers, sailing later than September 5th. Additional accommodations have been built on Gallop's Island, and other islands in the harbor will be occupied by the Board of Health, should it be necessary. Several buildings in the city have been selected and placed in condition to be made into temporary hospitals at short notice. All

immigrants, on arrival at quarantine, are given a bath, and their clothes and baggage are disinfected by steam.

The New York Academy of Medicine, at a special meeting held Monday, September 13th, passed a resolution that a committee, consisting of Drs. A. L. Loomis, A. Jacobi, E. G. Janeway, Stephen Smith, R. H. Derby, T. M. Prudden, and Allan McLane Hamilton, should examine into the methods of quarantine in the harbor of New York and report upon the same at a future meeting of the Academy.

Sir Joseph Fayrer, if the cable reports him correctly, doesn't think much of the views held by the rest of the medical world concerning cholera. He says that the diffusion of human intercourse does not explain the movements of epidemics, and he holds that, whatever the true origin and cause of cholera may be, the materies morbi is diffused through the atmosphere rather than in water. Nevertheless, he is willing to yield to a popular prejudice so far as to admit that, "it is undeniable that bad sanitation, and especially impure water, invites and increases the severity of cholera when the epidemic is present in the atmosphere." Of course, holding such views, he thoroughly disapproves of quarantine.

Quarantine on the St. Lawrence.—The Provincial Government of Quebec has issued a proclamation giving full force of law to the resolutions recently adopted by the Central Health Board. The resolution provides that no passengers shall be permitted to land from infected ports in any part of the Province, and that no immigrants at all, no matter where hailing from, are to be landed there. Regarding the vessels with passengers aboard which have already sailed for the St. Lawrence, an arrangement has been made by which the immigrants will be landed after undergoing whatever disinfection and examination in quarantine may be deemed necessary by the Board of Health.

Costa Rica has closed her ports against all immigrants from Europe until after the subsidence of the cholera. Several parties of agriculturists had been formed to establish colonies in that country, and this prohibition of immigration will cause great inconvenience.

To Investigate the Hamburg Officials.—A Berlin despatch to the *Staats-Zeitung* says that a discussion will be opened shortly in the Bundesrath upon the conduct of the city officials and police of Hamburg in relation to the present epidemic.

The Spanish Authorities have ordered that all vessels coming from London be subjected to quarantine in Spanish ports. The Consul of Spain in New York has refused to give clean bills of health to vessels sailing from this port.

The Russian Hospitals.—Professor Virchow has recently visited Russia, and reports that the means in use for combating the cholera in that country can hardly be improved upon in any respect. This report is so at variance with what other observers have said, that the German physicians are wondering how many cholera hospitals Virchow's hosts permitted him to inspect.

Section on Public Health of the New York Academy of Medicine.—Stated Meeting will be held on Monday, September 19th, at 8 P.M., when the following papers will be read: "The Present Status of Quarantine Laws, with their Administration," by S. T. Armstrong, M.D.; "How Long shall a Cholera-infected Vessel be Detained at Quarantine?" by A. L. Carroll, M.D.; "General Disinfection: Steam, Sulphur, Sublimate," etc., by J. H. Raymond, M.D.; "The Biological Characters of the Cholera Spirillum," by George M. Sternberg, M.D., Deputy Surgeon-General U. S. A.; "Local Measures of Prevention and Relief in New York City," by Stephen Smith, M.D.; "The Profession and Cholera—Suggestions," by A. Jacobi, M.D. Remarks by Dr. E. G. Janeway, the Chairman, and others. Henry D. Chapin, M.D., Chairman; S. T. Armstrong, M.D., Secretary. The profession is cordially invited to attend.

American Gynecological Society.—The Seventeenth Annual Meeting will be held in the chapel of the Polytechnic Institute, Livingston Street, near Court, Brooklyn, N. Y., on September 20, 21, and 22, 1892. Physicians are cordially invited to be present.

Drawing the Line at Cholera.—The peasants of a little village near Moscow, fearing an invasion of cholera, put a charm around the place in accordance with an old superstition. Six virgins, led by two widows, dragged a plough at midnight around the village, while a third widow preceded them, carrying in her hands a banner with the image of the Holy Virgin. The cholera, as the peasants believe, will never be able to cross the line made by the plough, and as long as they remain within this magic circle no harm can come to them from this scourge.

A Large Placenta.—Dr. C. C. Perry, of West Rutland, Vt., writes that he assisted at a case of childbirth recently, in which the placenta weighed $4\frac{3}{4}$ pounds. It was apparently normal in other respects.

A Slight Error.—The New York correspondent of the London *Lancet* informs the readers of that journal that there were 1,663 deaths from measles in this city during the past year. The writer made the mistake of getting his figures at second hand, and so credited us with 1,000 deaths too many.

A Big Price for Typhus.—A man named Herskowitz has sued the proprietors of a Bowery lodging-house for $10,000. He says that in February last the Health Board removed from the house several persons afflicted with typhus fever, and that he took a room there subsequently under representations that there was no danger of the fever. He contracted the fever, and from February 20th to May 13th was on Ward's Island. This is at the rate of $1,000 a week.

A Day in Bed once every month is the prescription which Dr. F. W. Abbott suggests, in the *Massachusetts Medical Journal*, for the overworked physician. It will do him more good, the writer says, than an annual vacation several weeks in length.

Colony System for the Insane in France.—The "family" system of treating lunatics, which has been so successfully carried out in Belgium, at Gheel, and more recently at Lierneux, and also in Scotland and in the United States, has not till quite lately found favor in France. At the instigation of M. Charles Féré, however, the General Council of the Seine Department instituted in 1891 an inquiry on the subject. As the result of this

inquiry the Council, at a meeting held on July 12th, adopted a report presented by M. Deschamps, in which a proposal was made that a first "family colony" of one hundred patients suffering from senile dementia, and belonging exclusively to the category of harmless lunatics, shall be established at Dun-sur-Auron, in the Cher Department.—*British Medical Journal.*

Attempted Suicide of Children.—Five children in Berlin recently attempted to commit suicide in order to escape cruel treatment at the hands of their stepmother. One only of the children died The oldest of the five was but thirteen years of age.

Garbage Disposal in Montreal.—The Board of Aldermen of Montreal has accepted a plan for the cremation of garbage, and work is to be begun immediately upon the construction of two incinerators just outside of the city.

A Stereotyped Verdict.—Coroner's juries in England are becoming so familiar of late with deaths from chloroform that they have learned to give them the euphemistic name of "death from misadventure," and such is the verdict brought in in nearly every case wherever occurring.

Medical Education in Hyderabad.—Dr. Lawrie, the Director of the Medical Service of Hyderabad, gives an account of the progress of medical education there. He says that there are now eighty-five students in the Medical School, and among those who were graduated during the year were three women.

An English Physician has recently been threatened with prosecution for attending his own mother in a Swiss hotel. "It is lamentable," to quote our sorrowing contemporary, *The Lancet*, "to think how illiberal the law of Switzerland is in reference to foreign medical men."

Female Medical Students in Edinburgh.—The Governors of the Edinburgh Royal Infirmary have yielded to pressure and have agreed to admit female students to two wards, containing about twenty beds each. The University requires a minimum of eighty beds for medico-chirurgical teaching, but it is hoped to get over this objection by admitting women to the eye and skin departments. In commenting on this permission so reluctantly given, the *Medical Press* says that "the Governors may as well give in with a good grace. They have surrendered all the principles upon which they opposed the admission of the ladies, and they need not haggle about the throwing of the sponge to the full height. They will have to follow the British Medical Association, tied to the victorious chariot of the ladies."

The British Army Surgeon has a sore grievance against the Duke of St. Albans. In a recent magazine article on one of the tropical colonies, his grace mentioned incidentally that a military doctor, having mistaken one case of yellow fever for delirium tremens, proceeded to treat subsequent cases of "drink" as yellow fever, in order to avoid the repetition of the error. The noble duke probably meant it for a joke, but he forgot that he was writing for British readers, and until they "catch on" he must suffer for his imprudence.

Legislating against Itinerant Quacks.—The city of Effingham, Ill., enjoys the privilege of having a physician for mayor, and its City Council has recently passed the following ordinance: Be it ordained by the City Council of the city of Effingham: That it shall be unlawful for any itinerant physician or itinerant vendor of drugs or medicines to practise medicine in any of its branches, or sell or dispose of any drug, medicine, nostrum, or ointment intended for the treatment of disease or injury, or to open an office for such purpose, or to announce to the public in any way an intention to practise medicine, or to sell or dispose of such drug, medicine, nostrum, or ointment within the corporate limits of this city. Provided, That nothing in this ordinance shall be so construed as to prohibit any reputable physician or surgeon from any other place being called to see a particular case or family, or to do a particular operation in said city. Any person violating this ordinance shall be subject to a penalty of not less than fifty ($50) dollars nor more than one hundred ($100) dollars.

Dated this 2d day of August, A.D. 1892.

Approved: J. B. WALKER, *Mayor.*

Attest: W. M. STEWART, *Clerk.*

Laudanum without Opium.—Three druggists in Nottingham, England, were recently fined for selling adulterated laudanum. In two cases the liquid contained a very small quantity of opium, but in one there was not a trace.

American Association of Obstetricians and Gynecologists.—The following is the list of papers to be read at the fifth annual meeting of this Association, to be held in St. Louis, September 20, 21, and 22, 1892: "Posture in Relation to Obstetrics and Gynecology," by Dr. Wm. W. Potter, of Buffalo; "Nephrotomy and Nephrectomy Successfully Performed on One Patient for Multiple Abscess," by Dr. Geo. S. Peck, of Youngstown; "Present Status of Obstetrics, with a Report of My Own Work," by Dr. Joseph Price, of Philadelphia; "The Essential Question of Drainage in Pelvic Surgery," by Dr. L. S. McMurtry, of Louisville; "The Intestinal Canal as a Source of Infection in Abdominal Surgery," by Dr. W. G. Macdonald, of Albany; "The Technique of Vaginal Hysterectomy," by Dr. J. H. Carstens, of Detroit; "The Repair of Intestinal Lesions which occur during the Progress of Abdominal Operations," by Dr. W. E. B. Davis, of Birmingham; "The Surgical Treatment of Intestinal Wounds," by Dr. David Barrow, of Lexington; "Tetanus Following Minor Gynecological Operations," by Dr. Edwin Walker, of Evansville; "Advantages of Version in a Certain Class of Obstetric Cases," by Dr. A. P. Clarke, of Cambridge; "The Pelvic Symphyses in Pregnancy and Parturition," by Dr. W. J. Conklin, of Dayton; "Embryotomy," by Dr. E. P. Bernardy, of Philadelphia; "The Delivery of the After-coming Head," by Dr. W. W. Seymour," of Troy; "Tumors of the Abdominal Wall," by Dr. Edward J. Ill, of Newark; "Two Unusual Cases of Fibroids: Removal by Abdominal Section," by Dr. A. B. Miller, of Syracuse; President's Address: "Some Considerations in Reference to Uterine Hemorrhage—Puerperal and Non puerperal," by Dr. A. Vander Veer, of Albany; "Sacral Resection: Its Place in Pelvic Surgery," by Dr. E. E. Montgomery, of Philadelphia; "Clinical Report of Gall-bladder Operations," by Dr. R. B. Hall, of Cincinnati; "Is Evolution Trying to do Away with the Clitoris?" by Dr. R T. Morris, of

New York; "The Surgical Treatment of Cancer of the Uterus," by Dr. C. A. L. Reed, of Cincinnati; "Abdominal Hysterectomy," by Dr. Joseph Price, of Philadelphia; "Abdominal Fixation," by Dr. F. Krug, of New York; "Experiences in Abdominal Surgery on the Insane," by Dr. W. P. Manton, of Detroit; "The Relation of Pelvic Disease and Psychical Disturbances in Women," by Dr. Geo. H. Rohe, of Catonsville; "Pus in the Pelvis and Abdomen: Its Diagnosis and Treatment," by Dr. Joseph Hoffman, of Philadelphia; "Plastic Surgery of the Genital Tract," by Dr. T. E. McArdle, of Washington; "Plastic Surgery of the Pelvic Structures," by Dr. H. O. Marcy, of Boston; "Abdominal Section for Diagnosis," by Dr. Clinton Cushing, of San Francisco; "Extra-uterine Pregnancy," by Dr. Edwin Ricketts, of Cincinnati; "Four Cases of Ectopic Pregnancy and the Lessons they Teach," by Dr. R. B. Hall, of Cincinnati; "Ectopic Gestation: Its Varieties, Symptoms, and Treatment during its Several Stages," by Dr. J. F. W. Ross, of Toronto.

Bedbugs, according to Dr. Dewèvre, may be the carriers of tuberculosis contagion. His attention was called to this possibility by a case of tuberculosis occurring in a young man who slept in a bed formerly occupied by his brother, who had died of the disease. The room had been thoroughly disinfected, but the bedstead had for some reason escaped this salutary process. Dr. Dewèvre observed that the young man had been bitten by the insects, and securing some of them, found them full of tubercle bacilli. He afterward put some presumably healthy bugs in contact with tuberculous sputum, and was able to obtain from them, several weeks later, some excellent cultures of tubercle bacilli. The bugs seemed lively, however, and had no cough, night-sweats, or other of the familiar clinical symptoms of the disease.

The American Electro-therapeutic Association will meet at the Academy of Medicine, New York, October 4th, 5th, and 6th. There will be discussions upon "The Relative Fœticidal Value of the Different Currents and their Application to Ectopic Gestation," and "Cataphoresis and its Practical Application as a Therapeutic Measure." Papers are announced by Drs. George J. Engleman, Wellington Adams, and George F. Hulbert, of St. Louis; William F. Hutchinson, of Providence, R. I.; Franklin H. Martin, of Chicago, Ill.; A. Lapthorn Smith, of Montreal; R. J. Nunn, of Savannah, Ga.; Thomas W. Poole, of Lindsay, Ontario; C. Eugene Riggs, of St. Paul; W. J. Herdman, of Ann Arbor, Mich.; D. S. Campbell, of Detroit, Mich.; G. Betton Massey, of Philadelphia; Henry D. Fry, of Washington, D. C.; H. E. Hayd, of Buffalo, N. Y.; J. H. Kellog, of Battle Creek, Mich.; C. G. Cannaday, of Roanoke, Va.; Ernest Wende, of Buffalo, N. Y.; and William J. Morton, Augustin H. Goelet, A. D. Rockwell, Landon Carter Gray, Robert Newman, Ephraim Cutter, Frederick Peterson, J. Mount Bleyer, G. M. Hammond, and F. Van Raitz, of New York.

Orchid Tea.—The Parisians have recently been developing a taste for a new beverage called Faham tea. This is a product obtained from the flat dried leaves of a small species of orchid (*Angræcum fragrans*) with white flowers, which grows as a parasite hanging from trees in the forests of Mauritius and Réunion. Although the plant in question has been long known to botanists and the beverage used locally, its introduction to Paris as an article of commerce is quite recent. Samples of this "orchid tea," and of cigars made of the leaves, which emit a vanilla-like aroma, according to the *Kew Bulletin*, are now deposited in the Museum, and the plant can be seen growing in the orchid house. The tea is very simply made by putting the leaves in cold water, about fifteen grains to the teacupful, closing the vessel and boiling for ten minutes. The tea may be sweetened according to the taste, and milk and rum bring out the flavor more strongly. It is as good cold as hot, and may be warmed up without deterioration. Material enough for fifty cups is sold in Paris for 2 fr. 50 c.

Father Mollinger's Remedies.—Since the death of Father Mollinger the shrine on Troy Hill has been closed, and the good Saint Anthony is enjoying a holiday from the miracle business, but the profits arising from the trade were too large to be given up without effort, and we have the druggist who prepared the priest's prescriptions advertising "Father Mollinger's Remedies" for the cure of cancer, consumption, rheumatism, etc. But it seems he is not to have this lucrative field without rivalry, for the private secretary of the deceased clergyman is announcing "The Only True Remedies of Father Mollinger," and claiming that his official position gives assurance of the genuineness of his preparations. These remedies, it seems, are the stock prescriptions which the reverend Father was wont to give with his blessing, and it may be assumed that he apportioned them according to what ability he possessed as a medical man. Now they are to be used for self-treatment by the people at large. Truly, "The evil that men do lives after them, the good is oft interred with their bones." With the reputation among the vulgar that Father Mollinger possessed, comes a grand opportunity for a successful quack medicine establishment, and we would recommend the occasion to the enterprising gentlemen of St. Louis who are so prominent and apt in this business.—*Pittsburgh Medical Review.*

A Hydrophobia Scare.—Between ten and fifteen persons were bitten a few days ago, in Anderson, Ind., by dogs supposed to be suffering from rabies. One person is said to have died from hydrophobia, and all those bitten are suffering from fright.

Dr. John J. Reese, of Philadelphia, died on September 4th, at Atlantic City. He was born in 1818, and was graduated from the University of Pennsylvania in 1839. During the war he served as Assistant Surgeon in the army. For twenty-five years Dr. Reese occupied the chair of medical jurisprudence and toxicology at the University of Pennsylvania, and was a well-known writer and authority on these subjects.

University of Edinburgh.—The number of medical degrees conferred at the recent commencement at Edinburgh University was the largest on record, including 202 Bachelors of Medicine, and 60 Doctors of Medicine.

The Russian Congress of Hygiene will be held in St. Petersburg, in the spring of 1893, under the protectorship of the Grand Duke Paul Alexandrovitch. The work of the Congress will be divided into five sections, namely: 1. Biology. 2. Sanitary and Medical Statistics, Epidemi-

ology, and Medical Geography. 3. Hygiene of Inhabited Districts, Public and Private Buildings and Work-places, Food Supply, Clothing, Cleanliness and Disinfection, Hospital Administration, and other Prophylactic Measures. 4. Hygiene of Rearing and Education. 5. Geology, Climatology, and Balneology.

L.R.C.P. & S.Ed.L.F.P. & S.G.F.R.C.S.Ed. are the letters following the name of a Professor of Anatomy in one of the medical schools of this great country. He ought to be a good one.

Sir Walter Foster enjoys the distinction of being the first member of the medical profession to have a position in the British Ministry, having accepted, under Gladstone, the post of Political Secretary to the local Government Board.

An Epidemic of Typhoid Fever.—According to a recent despatch typhoid fever is prevailing to an unusual extent in the town of Oakdale, near Pittsburg. There were, a week ago, over one hundred and twenty cases under treatment and the mortality was about eighteen per cent. The water supply is said to be in a wretched condition.

Laryngology at the Rome Congress.—It had been arranged by the Organizing Committee of the Eleventh International Medical Congress that laryngology and otology should be combined in one section. Dr. Fraenkel, President of the Berlin Laryngological Society, protested so energetically against this decision, however, that it has now been determined that each of these sub jects shall have a section to itself.

Cremation in England.—The first incineration in the newly erected crematorium at Manchester took place on August 22d. The body was that of Mr. Thomas Morgan Brown, who died at Carlisle at the age of eighty four years. He had recently returned to England after a residence of forty years in this country.

An Army Medical Board will be in session in New York during October, 1892, for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies.

Regulation of the Ice Supply.—The Conseil d'Hygiène de la Seine, recognizing the possible dangers from cholera and other germs, have forbidden ice to be taken from certain ponds and have passed resolutions controlling the quality of ice sold in Paris. The Prefect of Police has been requested to supervise the manufacture of artificial table-waters, and to inquire into the purity of waters used in making artificial ice.

The University of Bonn.—Professor Sämisch has been elected Rector of the University of Bonn, and Professor Binz Dean of the Medical Faculty.

Influenza is reported to be raging in Peru. In some parts almost half the inhabitants are attacked by the disease.

Dr. Albrecht Burckhardt has been appointed to the newly founded Chair of Hygiene in the University of Basle.

The Academy of Medicine of Lima was recently asked by the government for an opinion as to the value of registration and examination of prostitutes in the prevention of syphilis. The committee to whom the question was referred was unanimous in its approval of the proposed measure.

Foot-ball Casualties.—Eleven deaths and seventy severe injuries resulted from foot ball playing in England during the past season.

A Piece of Steel in the Heart.—A man died a few days ago in Brooklyn from the results of a fracture of the skull received in a bar room fight. At the autopsy a piece of steel wire, looking something like a woman's hatpin, nearly an inch and a half long, was found in the heart-wall. The point at which it entered the body was found in the form of a minute scar just below the left nipple. How long it had been in the heart could not be determined, but it was evidently not of recent introduction.

The Health of Panama.—Dr. C. H. Williamson, writing to the *Sanitarian* from Panama, says that for some time that city has been quite healthy, and not a case of malignant fever has been heard of in several months. No doubt, he says, its causes still exist, but the reduction of the population has diminished the *materies morbi*. The sanitary condition of the city has been somewhat improved; many of the streets have been repaved and are regularly swept by the prisoners from the jail; several small plazas have been renovated and inclosed by iron railings, the walks cemented, seats provided, trees and plants set out, so that they now present quite an ornamental and pretty appearance. Panama is, however, destitute of a proper system of sewerage and an adequate supply of water, and until these defects are remedied it must continue to be liable to disease, particularly in the dry season.

The Medical Pioneer is the name of a new journal to be published monthly in London by the Council of the British Medical Temperance Association.

Chicago Physicians have, as it appears to outside barbarians, the strange custom of herding together in the tall down-town buildings. Thus it is said that in the Venetian building on Washington Street over six hundred doctors have their offices, while the Masonic Temple comes in a good second with five hundred and seventy.

Hiccough is often arrested by red pepper tea taken as hot as possible.

Tape-worm has been successfully treated by salicylic acid in hourly doses of eight grains each. After the fifth dose castor-oil is given.

London Specialists.—Dr. William E. Briggs, writing from London to the *Occidental Medical Times*, is rather severe on certain of the physicians of that town who are known as specialists in various branches. For example, he says: "A number of men who have done much for ophthalmology in London have died during the past fifteen years, and among their successors there is no one conspicuous as a scientist, original investigator, teacher, or operator. In the throat hospitals one sees some good work, but of the treatment of the ear the less said the better."

Canadian Militia Surgeons.—A special general meeting of the Association of Medical Officers of the Militia of Canada will be held during the session of the Canadian Medical Association at Ottawa, on September 21st, 22d, and 23d.

Correspondence.

OUR BERLIN LETTER.

(From our Berlin Correspondent.)

THE ONLY USE FOR BACTERIOLOGICAL AMBITION—CHOLERA IN GERMANY—SALOL AS A REMEDY—IMMUNITY AGAINST CHOLERA—EXTERMINATION OF FIELD-MOUSE—DEATH OF PROFESSOR VON MEYER.

BERLIN, August 23, 1892.

THE annual vacation for physicians, commencing at the beginning of August, terminated abruptly owing to the dread of the cholera spreading from the East.

Until a few days ago the conditions of health on the "border line" between Germany and Russia were satisfactory. With the exception of a single case of "cholerine" in Breslau, and sporadic cases in the northern Schlesingen districts, the health reports, considering the hot summer, were excellent.

Unfortunately, however, cholera has forced its way through Hamburg, which is the most dangerous medium for its transmission through Germany. To-day we have authentic cases of Asiatic cholera in Altona and Hamburg. The Government sent Professors Koch and Rahts to Hamburg to use all sanitary precautions which they thought advisable. The mortality thus far is about fifty per cent. Considering the position of Hamburg, its enormous shipping, the unsatisfactory sewerage, it is but a question of time when cholera will push its way into the centre of Germany. Luckily we are ready to meet this pest in the hospital Moabit (barracks), which is destined to be used as an epidemic hospital. In all other large hospitals the building of barracks which are all isolated has been commenced.

As the cure of cholera is still a grave desideratum, so our main point will be "prohibition methods." This is the only practical use for bacteriological ambition, and it remains to be seen whether the prophylactic promises will be fulfilled. It will be very interesting to watch for the first time the combined prophylactic apparatus against a disease which has been thoroughly mastered from a bacteriological point of view. As the pest progresses innumerable new remedies are suggested, many of them very ridiculous.

The most important for us are the recommendations of Professor Loewenthal, in Paris, and Professor Rosenbach, of Breslau. Dr. Loewenthal reports that Dr. Francisco J. Gonzales y Salvador, in Yba (Philippine Islands), has tried salol in fifty-three cases and cured all but three of his patients. As against a mortality formerly of forty-five per cent., the latter's mortality in the salol treatment was six per cent. As early as 1888, Loewenthal recommended salol after experimenting in Berlin, in Koch's institute, partly also with Cornil, in Paris, owing to the fact that salol on entering the system forms salicylic acid and phenol; not only killing the bacteria but preventing the formation of the cholera poison.

Although we do not dispute the brilliant results of Dr. Francisco J. Gonzales y Salvador, we believe that salol will share the same fate as the other antiseptics, reacting only in test-tubes or on guinea-pigs! The next practical point is the recommendation of Rosenbach, owing to the fact that C. Fränkel found that carbonic acid gas retards the growth of cultures of cholera bacilli. It is therefore indicated in the treatment of cholera to introduce carbonic acid gas into the stomach and intestines.

Rosenbach has tried this method for a long time for other purposes, and has demonstrated the fact that it is not dangerous. The only antagonism that would be encountered is first the pylorus, and then the Bauhin valve, which might prevent the entrance of gas into the small intestines. This may be overcome by consequent use of opium.

Alongside of these direct treatments we have investigators trying to render the body immune against cholera. Two such have been proposed, one by Dr. Klemperer, who is known by his experiments of immunity in pneumonia, who has tried to inoculate animals with cholera cultures (weakened by heat), and has produced immunity by direct injections of weakened cultures from 40.5° to 70° F., as also by injecting the serum of such immune animals. It is also interesting to note the experiment of prophylactic inoculation against the cholera intoxication from the intestine.

In reality the author was able, by using intra-peritoneal injections of heated cultures, to save animals which had previously received a deadly dose of cholera. Another experiment of the same author was to introduce a smaller dose of cholera cultures (not fatal) into the stomach, and after they recovered to inject the absolutely deadly dose. The author found that three days after introducing into the stomach from 5 to 8 c.c. of a cholera culture previously heated for two hours at a temperature of 70° F., that the animals were positively poison-proof (gift festigkeit). Animals receiving such treatment could withstand the deadly dose of either an intra-peritoneal injection or the introduction of the poison into the stomach. It must be mentioned that immunity was only rendered when, previous to introducing the immunity culture, he introduced 5 c.c. of soda.

Animals not receiving the soda died in the same manner as the control animals.

Opium injections combined with the soda prior to the immunity rendering injections, were useless. Animals treated with soda only, and then with the heated cultures, were all saved.

He also was able to render immune animals which had been injected with cultures through which an electric current had been passed.

The method of Brieger and Wasserman is based on the principle which these investigators, combined with Kitasato, reported a few months ago in the *Magazine for Hygiene for Infectious Diseases*, vol. xv., p. 137.

The investigators allowed cholera bacilli to grow twenty-four hours on a thymus culture, after which it was heated fifteen minutes at a temperature of 65° F., or ten minutes at a temperature of 80° F., and the so-prepared culture allowed to remain twenty-four hours in the ice-box. As a rule, guinea-pigs received .4 c.c. of this fluid (intra-peritoneal injections) on four succeeding days. The animals developed fever, partly subnormal temperatures, and recovered the following day.

On repeating these injections the same type of symptoms developed in a milder degree. Animals receiving this treatment could stand, four to five days after the beginning of this treatment, three times the deadly dose of the cholera culture. The animals merely reacted with a slight increase in temperature. The minimum dose to arrive at a poison proof condition was 1 c.c. of the above-named culture given on two succeeding days.

As the thymus fluid is rather difficult to obtain, these investigators tried to grow the cholera vibriones in the ordinary meat, water, peptone, gelatine, and heated these cultures on the following day for fifteen minutes to 65° F. With these cultures they were able to render guinea-pigs poison-proof against the cholera culture. The smallest poison-proof dose was 2 c.c. In order to test whether the heat was an important factor in rendering these cultures poison-proof, these investigators took cholera cultures on "thymus fluid" and stood them on ice a few days. With this fluid they produced the same poison-proof as they could with the heated, proving that the specific action exists in the thymus gland.

In the last number of *Centralblatt für Bacteriologie*, Professor Löffler, in Greifswald, a prominent scholar of Koch, reports the successful extermination of the field-mouse with the bacillus of mouse-typhus This bacillus is one of the recent additions to bacteriology. The important advantage of this bacillus, and which proved useful in the extermination of the field-mouse, is the fact

that when introduced into the digestive apparatus house- and field-mice are positively killed; whereas sheep and goats remain unharmed. That human beings are affected is out of the question. An important point was found by Löffler in the course of his experiments, that when inoculating one mouse in a certain cage, that all mice in this cage were infected from this inoculated mouse. The transmission occurs because the healthy mice are fed with the dejecta of the infected mice, which always contain bacilli, and swallow the deadly substance with the food.

The habit of mice to lick dead mice is a reason for the transmission of the mouse-typhus. Especially are mice fond of eating the intestine and brain of mice succumbing to mouse typhus.

After these investigations Löffler recommended the bacillus of mouse-typhus. The first opportunity to test the efficacy of this treatment Löffler received through a recommendation from Pasteur, when a commission, consisting of officers and landowners, begged him to apply his method to exterminate mice in Thessaly. Löffler tried, with brilliant result, the following method:

He laid small pieces of bread impregnated with mouse-typhus in small holes, hoping that the mice would swallow these and infect themselves. The transmission would result, he thought, by the swallowing of dejecta of the primary infected animals, and by licking of the dead from mouse-typhus. This method which Löffler planned proved fruitless. It was a question whether field mice in the middle of spring would eat bread when they had plenty of greens. In its practical execution the method was as follows: He was well stocked with clear cultures. He then prepared culture fluid. He boiled oats and straw with peptone and grape-sugar. He impregnated bread by laying it into dishes containing culture fluids. The pieces of bread were then placed into the mouse-holes. After one week a considerable reduction in the number of mice could be noticed. Of the successful result after his return Löffler was informed by the Grecian Government.

On July 21st Professor Heman v. Meyer, aged seventy-seven, died. He was one of our most prominent anatomists. His scientific career was based on the investigations of the mechanics of the human system. Professor v. Meyer was, from 1844 to 1889, professor in Zürich. He succeeded Jacob Henle, who at that time accepted a position at Heidelberg. Since 1889 Meyer has lived in his birthplace, in Frankfort-on-the-Main. His successor is Professor Phillip Stöhr, formerly of Würtzburg.

FEMALE PHYSICIANS IN INSANE ASYLUMS.

To the Editor of the Medical Record.

Sir: In an editorial in the Medical Record of August 20th, concerning female physicians in insane hospitals, it would appear that, at least in one State, the medical profession has come to recognize the propriety and advantageousness of the employment of women physicians for the care of the insane of their own sex: The resolutions adopted by the Pennsylvania Medical Society are in themselves a strong argument in favor of the movement, which the editor of the Medical Record takes occasion every now and then to condemn. Coming as they do from the profession of a State where women have been successfully tried in this capacity, shows that the need has not been over-estimated and that women physicians have proven their qualifications and abilities to be nowise inferior to those of male physicians.

The editor says: "Sometimes a female physician is needed and is useful." Medical people, at least, know that the causes of insanity, the habits, manners, and therapeutic requirements of the insane are practically the same the world over, and if a woman is needed and is useful in one hospital she is in another. The fact that "there are lady medicals who neither adorn nor help this ill-illumined world" has no more to do with the question than that there are gentlemen (?) medicals of whom the whole profession are ashamed, and who could not get a position on a hospital staff if they tried ever so hard. This class of either sex is not wanted in any position about an insane asylum.

Many unprejudiced superintendents are willing to acknowledge the reasonableness of the demand, and voluntarily employ a woman physician. In a personal letter, a hospital superintendent of twenty years' experience, speaking of his institution, says: "In a hospital where insane women are confined I think it eminently appropriate that they should receive the advantage of being treated by a physician of their own sex." But this matter should not be left to the discretion of superintendents, as they are frequently changed, and are often whimsically prejudiced. If it is wise and just and fitting that women should administer professionally to insane women, then it should be made compulsory by an act of legislation, and not left to the option of anyone. The State does not construct and maintain hospitals for the specific purpose of giving superintendents an opportunity to display any special predilection toward one sex or the other in the selection of their medical staff.

The comfort and welfare of the patients are supposed to receive some slight consideration.

Sara A. Kime, M.D.

Fort Dodge, Ia. August 18, 1892.

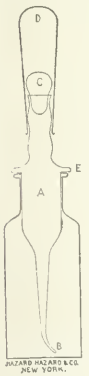
New Instruments.

AN INSTRUMENT FOR SYRINGING OUT CORTICAL MATTER IN CATARACT EXTRACTION.[1]

By JOSEPH A. ANDREWS, M.D.,

NEW YORK.

The accompanying cut represents a simple apparatus for syringing out cortical matter after cataract extraction.



Reduced one-half in size.

A is a hollow ground stopper drawn out into a tube which terminates in a smooth point, B, 1 mm. in diameter and curved as shown in the cut. The rubber nipple D serves to draw up and inject the fluid contained in the bottle. The ground stopper C closes the hollow stopper A, and prevents the fluid in the bottle from becoming contaminated by contact with the rubber nipple D when the bottle is transported. The collar E protects the mouth of the bottle from dust, etc.

The instruments in use for removing cortical matter in cataract extraction are either some sort of apparatus on the principle of the fountain syringe, with rubber tubing attached, or a very small hypodermic syringe (Meyer's). It is evidently not a simple matter to keep rubber tubing attached to such an apparatus aseptic, except by some such fluid as a solution of corrosive sublimate; and this, we know, is an objectionable injection for the anterior chamber of the eye. The same objection applies to the hypodermic syringe used for this purpose. The apparatus figured in this sketch is, therefore, simply a half-ounce bottle with a hollow stopper drawn out into a tube. The fluid used need never, if ordinary care be observed, pass up beyond the stopper C; therefore it comes in contact with glass only, which is readily sterilized by heat. The apparatus enables us to use a simple inoffensive fluid, as distilled water and one-half of one per cent. of chloride of sodium, which has, of course, been previously sterilized by heat, and which answers completely the purpose for which it is intended, *i. e.*, the mechanical re-

[1] Presented at the Twenty-eighth Annual Meeting of the American Ophthalmological Society, New London, Conn., July 19, 1892.

moval of cortical matter from the anterior chamber of the eye. It is almost needless to mention that the injection of air-bubbles into the eye can readily be avoided by withdrawing the tube from the anterior chamber before the last drops of fluid have been injected. These bottles are also used for washing out the conjunctival cul-de-sac preparatory to cataract extraction, and for such solutions (atropine, eserine, cocaine, etc.) as are required in cataract extraction. These bottles are made by Hazard, Hazard & Co., New York.

9 West Twenty-second Street.

Progress of Medical Science.

Auto-Infection of Cancer.—Dr. Hamburger relates an instance of auto infection of cancer. The patient was a woman who had an ulcerating epithelioma on the left labium minus. A number of small warty growths appeared upon the opposite labium which had come into contact with the somewhat acrid and offensive discharge from the original tumor. The growths upon both sides were removed and proven by microscopic examination to be all flat-celled epitheliomata.—*Med. Chirurg. Records*, No. 12, 1892.

Jejunostomy by a New Method.—In two cases of carcinoma Dr. Maydel (*Wiener Med. Woch.* No. 20, 1892), has operated by a new method, after finding that the greater curvature of the stomach and adjacent parts were so implicated that total extirpation or gastro-enterostomy was out of the question. A section of intestine below the duodeno-jejunal fold was drawn through the incision and the fæces well pressed out. It was then encircled with strips of iodoform gauze, to prevent further entrance of fecal matter, and cut across. An incision was now made on the surface of the distal portion about half an inch in length, just opposite the attachment of the mesentery, and into this opening was sutured the cut end of the proximal portion. The mucous surfaces were first united carefully, and then the serous surfaces were securely sutured with a double row of sutures. The still open extremity of the distal portion of the intestine was now united to the abdominal wound, and through this fistulous opening nourishment was maintained. Recovery followed promptly in both instances.

Sciatica and Varicose Veins.—Dr. Quénu expresses the opinion that certain cases of sciatica are due to varicose veins. He states that in people with varicose veins and sciatica, varicose veins are found around the nerve and sometimes adherent to it. A patient who had tried various other measures without success obtained relief for two years by wearing an elastic stocking up to the groin. In two other cases in which the pain had been intolerable Quénu dissected the veins away from the nerve. The pain disappeared, and has been absent for fourteen months in the one case and four or five months in the other more recently operated on. He looks on the operation of stretching the nerve as a brutal procedure, giving by no means brilliant results.—*The British Medical Journal*, June 11, 1892.

Non-bacillary Phthisis.—In a lecture on fibroid phthisis delivered at the London Hospital, Sir Andrew Clark said, among other things: "It has been alleged by Koch—and it is generally believed in London—that every case of phthisis, as I have defined it, is microbic, is associated with and dependent upon the presence and the action of tubercle bacilli. For my own part I presume to deny the allegation and to contend that while the great majority of cases of phthisis are bacillary there is a considerable minority of cases which are non-bacillary, in which at no period of their history can bacilli be found. To this denial it is sometimes replied that if the bacilli were not there when you sought for them they were there when you did not, or if they were very enthusiastic and proportionately polite they will say that you were unable to find them and that they were certainly there. Some years ago I had in my own wards three cases of what I designated as non-bacillary fibroid phthisis. I invited two or three of my more distinguished contemporaries to examine these cases and to demonstrate the existence of the tubercle bacillus in them. They failed and, justifying their failure, said, 'These are quite exceptional cases and do not break down our generalization.' But, gentlemen, it is just the exceptional cases of this kind that demand the most careful consideration, for although they do not bear immediately or greatly upon our practical clinical teaching, they bear sufficiently upon it to justify me in calling your attention to it at this time."

Death Under Pental.—The death of a German opera-singer is reported by the *British Medical Journal*, July 9, 1892, to have recently occurred after the administration of pental for the extraction of a tooth. Eight or ten drops were given upon a face-piece and the tooth removed, whereupon the patient fell back with a loud shriek and never recovered consciousness, attempts to restore animation proving of no avail. The official examination showed that the brain, lungs, and vessels were healthy; there was, however, some amount of fatty degeneration of the heart, and death was attributed to syncope, probably due to the condition of that organ.

Creosote in Tracheotomy.—Dr. Soupault reports, in the *Rev. des Mal de l'Enfance*, September, 1891, favorably upon the internal use of creosote in full doses after tracheotomy, and attributes the excellent showing of four to six per cent. of recoveries to its use. The drug is also to be applied externally over the tube in a one to thirty solution in alcohol and glycerine.

Gum-lancing.—Dr. Wood is convinced that gum-lancing is a highly important method of treating various conditions in childhood. He has seen convulsions, restlessness, disordered stomach, fever, and many functional disturbances immediately cured by this means, after various other measures had failed. Since amaurosis and many other conditions in the adult are well-known results of the trigeminal irritation from faulty teeth, it is only natural to expect more frequent and more severe troubles from the same variety of irritation in the child. The benefit is not to be attributed to the local extraction of blood, or to the relief afforded the inflamed gum, but to the removal of the backward pressure upon an extraordinarily sensitive and congested nerve-pulp. It is essential that the operation be thorough, and the dense tissues which bind down the teeth be completely divided.—*University Medical Magazine.*

Rule for Controlling the Sex.—Dr. Keefe gives the following in the *New York Medical Journal*, July 2, 1892: "When a given couple are having an excess of girls, and it is desired to have boys, they must refrain from all sexual intercourse, the female must wean her child, and live almost continuously out of doors, having gentle exercise, but not carried to the point of fatigue. She must be relieved of all, or nearly all, of her household cares, have a good rich diet of milk, rare-done meat, wine, fruit in moderation, amusements, and everything calculated to promote cheerful and happy thoughts. Her husband must have a more sparse diet and hard work. When male children are in excess, this treatment, except the paragraph referring to lactation, may be applied to the husband. Referring to animals, I would apply the rule in the same manner, and in addition would allow the male, if the stronger, to have connection with other animals while the female out of which it is desired to breed a male is resting."

Hemorrhage by Suggestion.—Drs. Artigalas and Rémond have published a case (*Revue de l'hypnotisme*, February, 1892) of a girl, who at sixteen had for some time daily nose-bleed. At the age of twenty-one hysterical attacks were noted, followed by vomiting of blood, and

subsequently hemorrhage from the left ear. Some days later there was bleeding from the left eye, and for several days in succession there were tears of blood and hysterical stygmata, hemianæsthesia in right side, and diminished sensibility of the pharynx. It was suggested that the blood cease to flow from the eye and escape by way of the hand, whereupon the palm began to show a bloody sweat, and this was arrested by suggestion that the whole process stop.

Syphilis Occulta is the name given by Dr. Fleiner to the late manifestations where the patient has no knowledge of when or how the disease was contracted, and in whom no evidence exists of early symptoms—the primary and secondary signs having been absent, or so slight as not to attract attention. It is apt to be severe because of non-treatment. The distinction between syphilis hereditaria tarda and syphilis occulta is that the former is congenital. It is not proper to assume, in the case of those who show tertiary symptoms at the age of fifteen or twenty, without previous history, that the disease is always hereditary. It must be remembered that it may be an instance of syphilis acquired in infancy which has remained hidden or occult, especially as children are exposed in many ways to infection.—*Deutsch. Archiv für Klin. Med.*, No. 48.

Albuminuria in Epilepsy.—From the observations of Drs. Voisin and Péron, albumin is found in the urine in about half the cases after the attack, and the quantity is in proportion to the number of seizures. The presence of albuminuria can thus not aid in differentiation between epilepsy and eclampsia. It has been noted that when the fit is attended with cyanosis and marked congestion of the face the quantity of albumin found is comparatively large.—*Archiv. de Neur.*, May, 1892.

Treatment of Actinomycosis.—Actinomycosis has generally been considered, in man at least, an almost incurable, if not a hopeless disease. Dr. Raffer, in the *Riforma Medicale* of February 4th, has reported four cases of recovery, in which the disease was accessible to surgical measures. These were scraping and the injection of antiseptics into the tumors—these injections consisting of a five per cent. solution of carbolic acid in glycerine, and if sinuses were present, cotton wool saturated with this fluid was introduced into them. Veterinary surgeons have for a long time employed tincture of iodine with much success as a local application, but quite recently a very distinguished teacher at the Utrecht Veterinary School has drawn attention to the value of iodide of potassium in every form of the disease when given as a drug; from his experience of this agent in cattle affected with actinomycosis, he pronounces it an infallible remedy, and Professor Nocard, at a recent meeting of the Paris Central Veterinary Society, in giving an interesting account of the disease, mentioned instances to prove that this medicament promptly and radically cures actinomycotic glossitis in cases which were formerly deemed hopeless. The dose for the ox began with six grammes in half a pint of water once a day to commence with, soon increased to eight grammes, until signs of iodism began to manifest themselves, when it was continued for a few days longer.—*The Lancet*, July 9, 1892.

Permanganate of Potash in Blennorrhagia.—Professor Reverdin employs a 1 to 5,000 solution of permanganate of potash in blennorrhagia, introduced by means of a small catheter passed down to the bulb, and the urethra thoroughly irrigated with about a quart of the fluid, at the temperature of 100° F., twice daily. A cure can be effected, it is said, in from three days to two weeks, and usually in a week's time, without any internal medicine.—*The Provincial Medical Journal*, August 1, 1892.

Therapeutics of Uric Acid Gravel.—Sir William Roberts, in a series of lectures on the chemistry and therapeutics of uric acid gravel and gout (*Lancet*, June 25, 1892), says the treatment of calculous disorders must be in the main preventive. The chemical force which is requisite to prevent the precipitation of uric acid in the urinary channels is almost infinitely small as compared with the force which is requisite to redissolve a concretion already formed. Uric acid gravel is constantly seen existing *per se*, in persons who are in all other respects perfectly healthy. From a therapeutic point it is a mischievous notion that uric acid gravel and gout are substantially the same disease. Gravel should be regarded as a primary vice of the urinary function, and the urine the proper field for its investigation and treatment. The author's experiments point strongly to the suggestion that subjects of gravel should be advised to take as much culinary salt as their palates will tolerate. The most reliable investigations indicate that fat, sugar, and starchy matters have not the slightest influence on the production and excretion of uric acid, nor has any proof been given that albuminoid substances of vegetable origin differ in this respect from albuminoid substances of animal origin. The author believes that the free use of farinaceous articles, salads, fruit, and garden vegetables, all comparitively poor in albuminoid constituents, should be advised. All other schemes of treatment sink into insignificance in comparison with that of diminishing the acidity of the urine. It is chemically impossible for uric acid to be deposited from an alkaline urine, and as we have the means of harmlessly reducing the acidity of the urine at will, we have in our hands, in principle at least, the absolute power of preventing uric acid gravel. The risk in gravel is almost confined to precipitations which take place within the precincts of the kidneys, and the author has found that the most risk of precipitation in the kidneys is during the time of sleep. Therefore, a single dose of citrate or bicarbonate of potash or soda (forty-five to sixty grains dissolved in three or four ounces of water), taken at bed-time, suffices for the milder cases. In others, a second dose can be taken in the night when the patient has a call to empty the bladder. The precipitation can thus be postponed until the urine reaches the bladder, whence it is swept away, as a rule, before it has a chance to do harm.

Tetanus.—Drs. Valliard and Ronget, in a report of their recent observations upon tetanus, *Annales de l'Institut Pasteur*, June, 1892, state that pus taken from the original injury in tetanus always contains numerous microbes in addition to the bacilli of tetanus which act by attracting leucocytes. Inoculation of tetanus from animal to animal soon fails completely, owing to the ease with which the auxiliary bacilli lose their power of developing in the tissues. This would account for the difficulty with which the affection spreads. So called idiopathic tetanus is due to a previous infective injury. Spores may be introduced, and though engulfed by leucocytes, may escape rapid destruction, and any departure from health (such as a bruise, chill, etc.) turns the scale in favor of the spore. Large wounds are less often followed by tetanus than small ones, probably because they are more carefully and rapidly treated with antiseptics.

Cool Baths in Typhoid.—Dr. Juhel-Rénoy believes that the introduction of the cool bath into the hospital treatment of typhoid fever has reduced the mortality at least five per cent., and cites figures in support of his opinion.

Treatment of Tricophytosis Capitis.—Dr. Laënnec washes the scalp with a solution of corrosive sublimate (1 to 4,000). The patches are then well soaped, scraped, and washed again and the lather reapplied. The following ointment is then spread over the entire scalp :

℞ Acid. chrysophanic.,
Acid. boric.,
Acid. salicylic.....āā gram 2
Vaseline..... 100

A rubber cap is now put on, which serves the additional purpose of protecting the eyes. The ointment is reap-

plied on the second day, and replaced on the third by frictions with essence of turpentine alternating with those of corrosive sublimate, after which the ointment may again be applied.—*Gaz. Méd. de Nantes.*

A Contribution to the Study of Hepatic Abscess.—Dr. Dabney (*The American Journal of the Medical Sciences*, August, 1892) bases a paper upon the analysis of one hundred and eight cases collected from various sources, and draws the following conclusions: 1. That hepatic abscesses rarely occur as a result of injuries or diseases of the bones or other parts of the body, except those directly connected with the portal system of veins, or immediately adjacent to the liver. 2. Ulceration of the bowels is a common cause of hepatic abscess, but neither the morbid changes nor the symptoms are those of simple dysentery. It is probable that in most cases, at least, when the hepatic abscess is due to dysentery the latter disease is amœbic in character. 3. An hepatic abscess may appear in two weeks from the commencement of the dysenteric attack, but the usual time is from four to twelve weeks. It is impossible to say how long a time must elapse after an attack of dysentery before all danger of hepatic abscess is past. 4. Abscesses originating in the bile-ducts, and those due to injuries of the liver itself, seem to be of comparatively rare occurrence. When due to injury, the abscess usually appears in a few days. 5. Abscesses occurring in connection with general septicæmia or pyæmia are probably nearly always multiple in number and small in size, but in rather more than half of all other cases the abscess is single and comparatively large. Abscesses due to gall-stones, however, are usually multiple. 6. Aspiration occasionally fails to reveal an hepatic abscess, because the needle may not enter it, or the contents of the abscess may be too thick to flow through the needle. 7. There are no means of determining with certainty the presence or absence of adhesions in a given case; pain, tenderness, and œdema over the seat of the liver suggest the presence of adhesions, but are by no means certain proof of their existence. Even the up-and-down movement during respiration of a needle inserted into the liver, is not a conclusive proof that adhesions do not exist, as was shown by a case recently under my care. 8. Of the symptoms and signs of hepatic abscess, pain, tenderness, and swelling in the hepatic region are by far the most important. Fever is present in a large proportion of cases, is intermittent in character, and except in pyæmic cases rarely rises above 102.5° or 103° F. Jaundice and ascites nearly always denote the presence of dense adhesions or gall-stones. Dyspnœa and cough are frequently present. 9. It is doubtful whether absorption of the contents of an hepatic abscess ever occurs; bursting is of frequent occurrence, the most usual direction being into a bronchus or the pleural cavity. Under expectant treatment death occurs in a large proportion of cases before bursting. 10. With respect to treatment, free incision and drainage give far better results than any other mode. The results of aspiration are rarely satisfactory, nor is aspiration itself entirely free from danger.

Searching for Light from Another Realm.—The lecturer on theosophy had concluded his long and able address, and stood looking at the audience. "If there is any question," he said, "that any of you would like to ask me before I sit down, I should be pleased to answer it." Amid the deep silence that followed this remark, an earnest-looking man near the door rose up and said: "I'd like to know, Professor, if anybody has ever yet discovered a reliable and certain cure for warts?"

He May have Died of the Antidote.—A man in Wilkesbarre, while picking wild berries on the mountain, was bitten by a rattlesnake and died a few hours later. In the effort to save his life six quarts of whiskey were poured down his throat.

Therapeutic Hints.

Tuberculous Bronchitis.—The following is recommended for the cough in commencing pulmonary phthisis:

℞. Creosote ..... ℥ j.
Tincture of cinchona ..... ℥ j.
Chloroform ..... ℥ ss.
Malaga wine ..... ℥ xij.

A dessertspoonful before each meal in a little water.

Salol in Chronic Cystitis.—Dr. E. Mansel Sympson, writing in *The Practitioner*, vol. xlviii., No. 6, 1892, recommends salol very highly in the treatment of chronic cystitis. As the drug is insoluble in water, he gives it in the following mixture:

℞. Salol ..... ℥ ij.
Pulv. acaciæ ..... q. s.
Aq. cinnamomi ..... ad ℥ xij.

M. et ft. mistura. Sig.: A tablespoonful every four or six hours.

Urticaria.—According to the *College and Clinical Record*, Dr. Stelwagon recommends the following local application for the relief of urticaria:

℞. Acidi carbolici ..... ℥ ij.
Acidi borici ..... ℥ iv.
Glycerini ..... ℥ j
Alcoholis ..... ℥ ij.
Aquæ ..... ad Oj.

M.

The systemic treatment should be the removal of the cause. Any disturbance of digestion must be corrected, if possible, and the diet should be of a simple character.

Summer Diarrhœa.—The Paris correspondent of the *Medical Press* sends to his paper the following formula for a remedy for summer diarrhœa:

℞. Lactic acid ..... ℥ ij.
Syrup of lemons ..... ℥ iv.
Water ..... ℥ xxxiij.

M. Sig.: To be taken during the day.

Gallacetophenone has been recommended in the treatment of psoriasis. It is applied in the form of a ten per cent. ointment.

A Depilatory.—The *Bulletin of Pharmacy* suggests the following as a good depilatory:

℞. Barii sulphidi ..... ℥ j.
Amyli,
Zinci oxidi ..... āā ℥ ss.
Aquæ ..... q. s.

M. et ft. Pasta.

This is to be spread evenly and not too thickly over the part and scraped off within ten minutes, or earlier, if pain is felt.

Europhen in Burns.—A writer in *La France Médicale* speaks enthusiastically of an ointment containing europhen as an application for burns. The following is a serviceable formula:

℞. Europhen ..... gr. xlv.
Olive-oil ..... ℥ ij.
Vaseline ..... ℥ ij.
Lanolin ..... ℥ j.

M. Sig.: For external use.

Quinine Hypodermically.—Dr. S. R. Hodge, writing in the *China Medical Missionary Journal*, gives the following formula for Waller's solution of quinine for hypodermic use:

℞. Quiniæ bisulph.,
Acid. tartaric ..... āā ℥ ij.
Glycerine ..... ℥ j.
Aquæ ..... ad ℥ ss.

Place the quinine in the bottom of a large wide-mouthed test-tube, put the heavier tartaric acid on top of it, add the water, heat gently to boiling-point over a spirit-lamp till a clear solution results, stirring it with a glass rod from time to time; then as it cools add the glycerine.

A clear one-ounce solution by measure results, of which dr. j. contains gr. xv. of quinine, and of course ♏ xx. = gr. v. This latter dose is equal to gr. xx. of quinine given by the mouth.

Asthma.—A writer in the *Gazzetta degli Ospitali* recommends a mixture of equal parts of lobelia, stramonium, and green tea leaves, rolled into a cigarette, for the relief of asthma. The leaves are well mixed and then soaked for a time in a saturated solution of potassium nitrate. After this they are dried and then kept for use in a large-mouthed, well-stoppered bottle.

Chapped Hands.—Dr. Steffen uses the following for rough and chapped hands:

℞. Menthol ..... gr. xxv.
Salol ..... ʒ ss.
Olive oil ..... ♏ xxv.
Lanoline ..... ʒ x.
M.

When this ointment is applied twice a day, the pain quickly ceases, the skin softens, and the rhagades heal.

Rheumatic Pains.—Rhus toxicodendron is recommended by several writers in the *American Therapeutist* as particularly efficacious in sciatica and other forms of neuralgia occurring in individuals with a rheumatic tendency.

Creosote is now prescribed so frequently for so many affections of the stomach and lungs that a Vienna pharmacist serves it from his soda fountain, and has numerous customers for it. The following is the formula for the syrup:

℞. Creosote ..... 1 part.
Cognac brandy ..... 50 parts.
Simple syrup ..... 300 parts.
Tincture of peppermint ..... 2 parts.
Mix.

—*Medical and Surgical Reporter.*

Summer Diarrhœa.—The following is one of an infinite number of formulæ recommended in this affection:

℞. Zinci oxidi ..... ʒ j.
Sodii bicarbonatis ..... ʒ ss.
Tinct. kameriæ ..... ʒ ss.
Syr. chloroformi ..... ʒ iij.
Aqua ..... ʒ ij.
M. Sig.: A tablespoonful every half hour.

A Skin Tonic.—The following is said to be an excellent cosmetic wash for the face:

Spirit of ammonia, and
Spirit of camphor, each ..... 1 ounce.
Coarse salt ..... 2½ ounces.
Boiling water ..... 1 pint.

These are thoroughly mixed, and when the solution is cold three ounces of alcohol should be added. It is to be well shaken before being used.

Exophthalmic Goitre.—Dr. Dieulafoy, writing in the *Bulletin Médical*, says that in cases of exophthalmic goitre the aim of treatment should be to lower the vascular excitement. He compares patients with this affection to those threatened with pulmonary hemorrhage, and treats them in the same way. He gives from four to six pills a day, made according to the following formula:

℞. Pulv. ipecac ..... gr. vj.
Pulv. digitalis ..... gr. iv.
Ext. opii ..... gr. ss.
M. et. ft. pil. No. xij.

He has had several cases in which an apparent cure resulted in the course of a few months. The only inconvenience of this medication is an occasional diarrhœa, which may be very troublesome until a tolerance has been established.

Anaphrodisiac Effect of Cocaine.—Dr. C. L. Gregory calls attention in the *American Therapeutist* to a loss of virility, amounting even to impotence, which he has observed in a number of cases to follow repeated applications of cocaine to the nasal mucous membrane.

For a Red Nose.—For the relief of redness of the nose not due to alcoholism an exchange recommends the local use of a five per cent. aqueous solution of boracic acid.

Tonic after a Debauch.—Dr. Whitla says that the following is of service in cases in which insomnia, anorexia, loss of will power, and mild hallucinations, following a prolonged debauch, point to threatening delirium tremens:

℞. Quininæ sulphatis ..... gr. xxv.
Acidi nitrohydrochlor. dil. ..... ʒ vi.
Ext. cinchonæ ..... ʒ iij.
Aquæ destillatæ ..... q. s. ad ʒ x.
M. Sig.: A tablespoonful in water three times a day before meals.

Treatment of Spinal Abscess.—Dr. Burrell concludes as follows concerning the management of abscesses in Pott's disease: 1. Efficient mechanical support of the spine is the prime factor in the treatment of caries of the spine associated with an abscess. 2. Under an expectant plan of treatment the abscess will, in many cases, disappear. 3. The indication for operative interference is a steady or rapid decline in the patient's general condition. 4. The operation should consist in thorough evacuation of the abscess, and the establishment of drainage from as near the seat of the disease as is practicable. —*Archives of Pediatrics.*

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 10, 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	56	11
Scarlet fever	64	3
Cerebro-spinal meningitis	0	3
Measles	48	12
Diphtheria	71	17
Small-pox	5	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0
Mumps	0	0

Sanitary Progress in Washington.—With the first of July the city adopted the system of carrying off garbage in patent air-tight steel carts, and, treating it with exhaust steam, to pass the offensive gases into the sewers (in other words, into the houses and streets). "The plan works well, and we are delighted," says a correspondent. It must be delightful.—*Sanitary Era.*

For Sea-sickness.—Dr. John M. Miller, writing in the *British Medical Journal*, says that a four years' experience at sea has convinced him that there is no remedy like Worcester sauce, in teaspoonful doses, given without water, for preventing and curing sea-sickness. In some cases the good effects of the remedy may be increased by the application of a tightly applied bandage, rest on the right side, and frequent small quantities of fluid food. The remedy is easily obtained on most steamers, pleasant to take, and has often succeeded in the writer's hands when all other means have failed. It should be given every three hours until the stomach can tolerate and retain ordinary food. He does not approve of stimulants, but gives small quantities of good beef-tea with cayenne pepper in it.

Vaccination and Small-pox.—It is a noteworthy fact that not a single case of small-pox occurred during the year 1890 in the British army. If this be not evidence of the protection afforded by re-vaccination against a malady once so common—and still disastrously fatal in

armies where this precaution is not vigorously enforced—then logic and reason are mere accomplishments!—*Medical Press.*

Cows.—The late Sir James Simpson once discomfited a cross examining counsel by saying that, for the purpose of his argument, a cow was as good as a countess. The physiological equality of human and bovine females is also officially recognized in the department of the Rhône, as appears from a circular recently sent to the medical inspector of the district, in which a reference is made to the necessity of increased facilities for the analysis of "samples of the milk of women, cows, or other [animals]" (*femmes, vaches, ou autres*). This reminds us of an advertisement which used to be—and, for all we know, still is—issued by a large shipping firm, in which the catalogue of the virtues and attractions of their vessels wound up with the announcement that they carried "an experienced surgeon and a cow."—*British Medical Journal.*

Rheumatism in Japan.—It is a strange fact, mentioned by Dr. Michaut, of Yokohama, that in spite of its being an essentially moist and rainy country rheumatism in all its forms is a pathological rarity among the natives of Japan, while the Europeans residing there are almost all rheumatic. This immunity the writer is inclined to attribute to the use of very hot baths, which is universal in Japan. The temperature of the Japanese bath is never less than 107° F., and he has been assured that they can endure a bath at the temperature of 122° F. A Japanese bathes once, sometimes twice, a day. His skin is more active than that of Europeans, is thicker and much less sensitive to cold and to external irritations.—*Boston Medical and Surgical Journal.*

Good Bread.—The Russian Public Health Society is about to establish a few model bakehouses in St. Petersburg, where all kinds of bread will be procurable free from adulteration and at reasonable prices.

Medical Work in Berlin.—The *British Medical Journal* summarizes in a recent number the statistical report of the Clinical Institute of the Berlin University for the year 1891-92. According to this report, v. Bergmann's surgical clinic received 1,717 patients, of whom 156 died, and 1,532 were dismissed after treatment. In the outpatient department 20,818 persons were treated. Professor Senator's policlinic treated 12,379 persons, and Professor Schweigger's eye policlinic 11,688 persons, and 1,095 persons were received as in-patients. In Olshausen's Gynecological Institute there were 1,082 births, and 876 further patients were received. In the policlinic attached to the Institute 2,501 obstetrical cases and 1,078 other cases were treated; 381 gynecological operations were undertaken, and there were 150 post-mortem examinations, of which 60 were new-born infants. The Ear Hospital received 248 in-patients; and 25,648 were treated in the policlinic attached to it; 2,953 cases were treated in the policlinic for throat and nose diseases, conducted by Professor B. Fraenkel.

Excellent Advice.—"Doctor, Wash your Feet," is the title of an article in one of our Chicago contemporaries.

Medicine and Morals.—Diderot has said that there is scarcely one moral maxim which may not serve also as a medical aphorism, and, on the other hand, there are very few medical aphorisms which cannot readily be converted into moral maxims.

Mosquitoes in Fleet Street.—London has recently been aroused to an unwonted pitch of excitement over the appearance of a few mosquitoes in town, and the papers are full of prescriptions for keeping them away from the sleeper. Even *The Lancet* joins each week in the general chorus, gravely recounting the virtues of various more or less disagreeable face-washes and the like. "Yet one other contrivance," it says, "even more easy of use because automatic, might be mentioned. This consists in the familiar practice of suspending some rather pungent antiseptic, such as carbolic acid or eucalyptus, in a vessel over a small gas-jet, lamp, or candle, so that the fumes may impregnate the air of apartments which are all too close to accommodate both men and mosquitoes. Human endurance may well sustain the feather-weight of such trifling impedimenta, and even enjoy the incense of unwonted odors when they bring deliverance from an acquaintanceship as trying as it is unhappily seasonable." Have our cousins ever heard of mosquito-nets?

An Italian Medical Novelist.—Dr. Leonzio Capparelli, who died in March last, in Naples, was a well known physician of that city, and was also the author of several works on medicine and surgery. Five years ago he published a novel entitled "Dr. Pietra," which attracted considerable attention and met with a very favorable reception from both critics and the public. Since his death his daughter has found among his papers the manuscript of another story, called "In Illo Tempore," which she has edited and will have published in Florence. The plot is laid in the slums of Naples during the reign of the notorious Bomba, and is said to be full of interest, as well as realistic in the better sense. At the same time with this, a new edition of "Dr. Pietra," containing all the author's changes of the original, will be published.

Orificial Surgery in a Nutshell.—Dr. Carmichael thus explains it all in the *Medical Times*: "In these days of a more perfected knowledge of the nervous mysteries of the body, there is no difficulty in tracing the translation of such morbid irritations all through the endless mazes of the nervous tendrils, winding here, there, and everywhere, through an unbroken continuity, onward and upward in this case, through vaginal, uterine, and ovarian sympathetic plexuses by cell antennæ to ganglia; again, still onward and upward through hemorrhoidal and sacral plexuses to afferent nerves, to columns of cord, to medulla oblongata, to central, cerebellar, and cerebral ganglia. Finally, by tendrils of corona radiata and association fibres to the cortex of the brain, the efficient factor of mentality and intellection, all ending in the deplorable overthrow of the mind and the development of insanity. Thus in few words we have before us the details of the sad and sorry picture, and thus do we bring into bold relief the beneficent effects of 'Orificial Surgery.'"

Where Salubrity is Not.—Dr. Salmons, writing to the *Indiana Medical Journal* from Guanajnato, Mexico, says that with two more deaths a month that town would have a death-rate of one hundred and thirty to the thousand, or six times as great as that of the largest cities of civilized countries. The city has forty thousand inhabitants. Most of the deaths were among the very lowest classes, who live in utter disregard of hygiene. Forty-two per cent. of all the deaths in May were of children under one year old, and from two-thirds to three-fourths were caused by diseases of the alimentary and respiratory organs. Of these two classes of diseases there were three times as many cases of the former as of the latter. There were many deaths from small-pox, but the health officer did not even think it worth while to call attention to it, an evidence that, large as the death-rate then was, the disease was not unusually prominent. Dr. Salmons adds, parenthetically, that he has a large practice. There certainly seems to be a field there.

Nursing Knows no Creeds, even as sickness makes no distinction for color, class, or sex. Again and again, in these columns, while we have maintained that the best nurse will be the woman who closely follows in the footsteps of the Great Physician, we have equally argued that dogmas and sects have no place in the sick room or the hospital ward. We have strongly disapproved, on the one hand, of the narrow bigotry which sought to make a matron, who became a Roman Catholic, resign her post, and so deprive her of her bread because she had changed her faith. On the other hand, we would condemn the exclusion from hospitals of women whose

form of worship is not so ceremonial as that upheld by the managers. Professor Virchow, the most eminent of German physicians, has recently denounced in the Berlin Municipal Council "the intrusion of religious arrogance into hospital nursing work," and we commend the following sentence to bigots of all sects: "Everybody knows that creeds claim supremacy in the healing of the sick; but we are profoundly interested in keeping away this conflict from the sick-bed, and permitting the spirit of humanity alone to assert itself there."—*The Nursing Record.*

Hypnosis as a Moral Force.—Dr. Berillon, of Paris, proposes to do away with corporal punishment for evil-disposed youngsters and to hypnotize them into sanctity. He has tried it on a number of children addicted to pilfering, lying, self-abuse, pugnacity, possibly cigarette-smoking, and other bad habits, and has succeeded in turning their steps into the straight and narrow path. There have been plenty of children emotionally converted at revival meetings before this, but unfortunately the "suggestion" was, as a rule, short lived in its efficacy.

The Misericordia of Florence is a society of persons banded together to do good. The society has its headquarters, and certain of its members are detailed for service each day. When sickness or accident calls them out, they slip on black or white robes, so that each is undistinguishable from the other, for the essence of their philanthropy is that they ignore all claims to gratitude for their services from those they benefit. Visitors to Florence have often seen these bands stealing through the streets, coming and going from the houses of the sick and dying. Allied to this association, and with somewhat similar objects, is the Medico-Chirurgical Guard, the members of which are young physicians and advanced medical students. They furnish medical aid to the poor, while the Misericordia supplies their other wants.

Cremation in England.—The coming method of disposal of the dead has made less progress perhaps in England than in any other civilized country in the world. According to the last edition of Wilson's "Handbook of Hygiene," there is but one crematorium in all England, namely at Woking, and even after the erection of that one, there was the greatest difficulty in devoting it to its use by reason of the popular prejudice against this mode of disposal of the dead.

The Log of a Ship's Surgeon.—The surgeons on one of the transatlantic lines are required by the rules of the company to furnish the health officer, on arrival, with a detailed description of all cases of sickness that have occurred on board during the voyage. That this is conscientiously done is shown by the following rather quaint report of the medical events during a recent voyage:

"We have inspected all immigrants every day according to the instructions and rules issued by the Health, American, and French officer.

"The Sunday, 24 of July, I have been called by the Steward Daududefin Charles, who was attending his business on the barroom. He was suffering from a violent pain in the hypogastric right part of the abdomen, where he was applying his hands, all the superior part of the body being bended forward. He went immediately to bed, and I could establish the diagnosis of intestinal obstruction. The patient have been a little unwell since three days before, and he was often subject to frequent constipation. I could notice also the coincidence of dark gums with blue line, slow pulse, and contracted abdominal walls. I can omit other symptoms for, no doubt, I was in the presence of intestinal obstruction, probably due to lead colic. The therapeutic treatment of enemas purgatives and prompt relief of pain could not succeed. After two days of constant cares, the second day at night the pulse went very small and frequent, the features pinched with Hippocratic expression. At 10 o'clock, the 25th of July, at night, he has had frequent vomiting of bile and mucus with hiccough, tympanic hypogastric bowels. He died at 4 o'clock in a state of complete exhaustion. He was immersed in the sea the 27th of July, at 3.30 in the morning. The same day, Wednesday 27, Mrs. Louise Deligans, French immigrant, delivered a girl born prematurely of about seven months. The father, French also, was on board with another child. All the family is all right.

"Now I have got in the infirmary Joseph Clolang, an American citizen coming from Switzerland. He has a broncho-pneumonia, and he is in treatment. He felt sick during the voyage. I suspect an interior pathological state of the lungs."

Purifying Water.—Dr. Daremberg, writing in *La Médecine Moderne* concerning the means of rendering a cholera-infected water innocuous, says that this end may be accomplished in one of three ways, viz., by filtering, by boiling, or by the addition of some chemical substance which will destroy the germs of the disease. The first of these methods is, as a rule, ineffective, and can be relied upon only when every detail is most scrupulously attended to. The second is effective, but troublesome, and cannot always be carried out, fire and a suitable vessel for boiling being indispensable. The third method is one which, he says, is equally effective with boiling, and which can be carried out anywhere, and at any time. The purification of water has been effected through the addition of alum, but the author prefers the acidulation of the water, especially in the case of possible cholera infection. Citric acid may be added to the water in the proportion of sixty to eighty centigrammes to the litre. This method is inexpensive, does not impart any unpleasant taste or odor to the water, and can be done anywhere without the need of cumbersome or delicate apparatus. In place of citric acid, tartaric or hydrochloric may be used, if desired.

Ventilation by Means of Heated Walls.—An improved system of ventilation has been introduced in the great hall of the new Sorbonne, in Paris, the principle resorted to being that of maintaining the walls at a higher temperature than that of the air which they enclose. In order to accomplish this, a mixing chamber is located beneath the auditorium, and hot and cold air are mixed to the temperature desired; the air is forced into the auditorium through a great number of small holes in the floor and in front of the seats, the opening being covered by a wire netting. Before the entrance of an audience, the walls are thoroughly warmed by forcing air heated to two hundred degrees into a conduit which delivers the air into a space behind the moulding and close to the floor. The wall is thus heated to a temperature of one hundred degrees—a temperature which, by radiation, will keep the audience comfortable, at the same time ventilating the hall with air at sixty degrees, derived from the mixing chamber. All downward cold drafts are thus prevented, the currents of air all being upward, owing to the heated surface.—*The Sun.*

Trional and Tetronal.—Dr. Ramoni has tried trional and tetronal in fifty-one insane men in the Roman Lunatic Asylum, and in some female patients in the S. Giovanni Hospital. The following are his conclusions: 1. The two new hypnotics are superior to sulphonal and chloral; 2, the patient awakes more easily, and there are no unpleasant after-effects, such as nausea, vomiting, loss of appetite, etc.; 3, the action of the drugs is rapid (thirty to sixty minutes); 4, trional is superior to tetronal, the sleep induced by the former being sounder and more lasting; 5, the sleep (after either of the drugs) lasts on the average six to eight hours, and is not disturbed by dreams.—*Riforma Medica.*

The Consumption of Tobacco is increasing in Great Britain. For the last year it averaged one and six-tenths pound per head of the population. In France it averages nearly two pounds.

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DISEASES AMONG INDIANS.

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(Continued from p. 331.)

SURGERY.

Of surgery it may be said the Indian's ideas are few and crude. In his native state, if we except the venereals (and why they were ever included in that branch of medicine in which cures are effected by mechanisms or manual operation, I have wondered), he does not often need the aid of surgery, since accidents are rare. When I inquired of the physician to a tribe of Indians in the Territory (Dr. J. E. Dodson, Osage) concerning surgery among his Indians, he stated the case laconically: "The Osages are very lazy and indolent, and never have any fractures, very seldom any dislocations or wounds." Those that have come infrequently under my care have been dislocations and fractures from gunshot wounds and horses falling. Dislocations seldom receive efficient treatment, and as the hip seems most frequently to have suffered, many Indians are seen who limp from an unreduced luxation of that joint.

The Indian's faculty for retaining one position indefinitely, his inertia, renders the native treatment of fracture quite satisfactory. In fracture of the upper extremities a rude splint is applied, usually at the present day made of part of the tin cans ubiquitous on the prairie; having removed bottom and top and split along the line of solder on the side, it is drawn firmly around the padded arm with leather lace strings passed through holes in the ends of the tin.

In fracture is of the lower extremities, a stationary fracture-box is made by driving parallel lines of short stakes in the ground ten or twelve inches apart and padding this interval into proper shape, usually adopting the double inclined plane as the most comfortable. Frequently the limb, in addition, is surrounded with stout splints or bits of board bound firmly to it, or put up in a kind of wicker work made of willow, described to me by Dr. J. Robinson, of the Western Shoshone Agency.

In a compound fracture of the leg which was treated without my assistance, the fracture-box was filled with cow's dung and the leg encased in this. Whether this as antiseptic surgery or not, I am unable to say, but the result was fairly satisfactory. The clay treatment of fractures, as applied to fractures, and no doubt in use in other tribes, is thus described: [1] According to the latter evidence of Dr. Powell, who has seen abdominal lacerations in men made by the bison, as well as wounds of the head region received under hand-to-hand encounters in war, treated by the Indians, the process is as follows: Plastic clay is selected, such as may in emergency be got from beneath a "buffalo wallow," and made into a thick mud with water; the wound is held together, while a thin coating is applied; then over this is placed a layer of body fibre crossed upon it in every direction; then another coat of mud, and so on, until a cake two inches thick covers the abdomen from flank to flank, the patient being kept upon his back during the treatment. The Pawnees, Utes, Apaches, Sioux, and Comanches make use of silky fibres obtained from plants for holding the clay together. The sage-brush, so common in Indian regions, furnishes one source of supply; another is a species of evergreen, unknown by name to Dr. Powell, which grows high up in the snowy range of the mountains. In extraordinary years, the fall of snow reaches from twenty to forty feet in depth, covering the trees. The snow partially melts, then freezes, and finally sinks in the warm season, stripping down the bark to the roots, and tearing out the inner bark into long thin strips, which are gathered by the Indians for use in dressing wounds. Choice clays are also stored up and kept for the same purpose

Fractures which I have treated myself have united readily, and in about the usual time; trivial wounds, on the contrary, I have found rarely to heal by first intention in this tribe. In a paper read before the Dearborn County, Ind., Medical Society in 1887, Dr. Treon relates the case of a Sioux Indian (Crow Creek Reservation) whose leg was caught by the knife of a reaper and nearly severed at junction of lower and middle thirds, tibia and fibula both badly cut and mangled, and which under conservative treatment healed quickly and kindly. This case is introduced to contrast with my own experience, which has been such that I now seldom unite slight wounds with suture, but leave them open for granulation and suppuration.

Indians take passionately to anæsthesia. Once they have seen it used they desire it for most trivial pains.

An Indian fell from his horse and alighted upon his shoulder, suffering a sub glenoid dislocation of the humerus, and sent for me. When chloroform had been given the mother and other female friends began mourning piteously, crying out that he was dead. Directly the head of the bone slipped into place, and being roused, he related to his friends that he had fallen asleep and had not suffered at all; they were much impressed. When I had cast aside the funnel I had prepared for administering the anæsthetic, I observed them secure and put it carefully away for future use in like emergency.

MISCELLANEOUS DISEASES.

Observations concerning some diseases and other matter not elsewhere found place for are introduced into this chapter.

A Skin Disease I have seen among the Indians differs from any I have seen elsewhere. It is rather a maculation. Occurring on the face about the lips, nose, or forehead, will be one or several solid patches, small or as large as the palm of the hand, resembling cicatrices, especially syphilitic cicatrices, without any pain, itching, or change of sensation, unless, perhaps, slight anæsthesia. The spots are of lighter color than surrounding skin. There seemed no constitutional symptom, and in most of the cases the patches gradually disappeared.

Vitiligo is not rare, and the two most extensive cases I have seen in any race are on this reservation. "Hits on the Hip," two years ago, noticed white spot on belly near navel, thought he ought to change his name to "Spotted Belly" from that. This spot spread and others came, and now he is white save small spots here and there over body of normal Indian color, and the skin of the hands and feet, which are not yet affected. On forearms Indian skin predominates, divided by white spots; the arms are mottled, the color being about equally divided. To-

[1] American Journal of Obstetrics etc., October, 1887.

ward shoulders the skin is white with spots of normal color.

Another Indian, "Child in the Mouth," is in about the same state, but the disease in his case has been of slower growth.

Hysteria.—Several cases of hysteric epilepsy came under my treatment, and milder forms of hysteria are not uncommon; which fact may be of interest to those who consider these diseases the result of higher civilization. Dr. Graham writes me: "Hysteria is very frequent among the younger women. Even those past middle age are subject to it. They have catalepsy and trance. Their hysteria simulates closely many vague and fatal diseases, and it is often difficult of diagnosis."

Chorea.—I saw one case well marked in a Crow girl of good physique and intelligence, about fourteen years of age. *Insanity* in the acute form, I think, is very rare; idiots and imbeciles are frequent. *Epilepsy* is common.

Indians' teeth are nearly always perfect. I have lifted out loose teeth for old Indians at times, but have never had complaint of an aching one. Half-breeds, on the contrary, frequently suffer. I have pulled several for half-breed children in the school, and almost every white person connected with the service has been afflicted with aching teeth, some local condition seeming to hasten dental decay. Earache and otorrhœa are common in both children and adults.

I occasionally see well-marked *arcus senilis* in ancient Indians.

Of *Hare-lip* I have seen two cases, neither with cleft palate, and one case of the latter without the cut in lip.

Indians constantly claim that sores (and especially venereal sores) are from *spider bites*. When closely questioned they admit they never saw the spider and do not remember when it bit them, but are quite sure the sore was thus caused. When there is a swelling as of scrofulous glands about the neck, they say there are *mice in it*, the swelling probably resembling to them the ridge of earth the ground mice make as they run beneath the surface.

Gray Hair.—Bossu, writing in 1771 of the Natchez of Louisiana, says, "the hair of two of the women, very old and infirm, was no more gray than hair of women of fifty-five years in France. The other old woman was one hundred and twenty years of age, and had very little white hair, which is a very uncommon thing among Indians."

Among the Crows I have seen very few white-haired old people, not beyond two or three in the entire tribe, and remarkably few gray-haired. Many of them fifty to sixty years of age have hair jet-black. When it begins turning gray, the custom is to color it with red pigment.

Bald Heads are unknown, even though syphilis with attendant alopecia prevails.

Peculiarities of *hair growth* are to be noted: Its absence on the bodies; its scarcity on the genitals; its scant growth on men's faces; its luxuriant growth on their heads.

Riding astride is the universal custom among Indian women. I have been curious to know if this has any injurious influence on the generative organs. In the few women I have examined I have found *procedentia uteri* rather frequent, but whether due or not to this cause, I cannot say.

Valvular Heart Lesion I have found with unusual frequency among the Indian school-children.

Demonology is recognized as among them. A bright little Indian boy, totally blind, was brought to me. His eyes were large and brown—pretty eyes—and to the observer perfectly normal, but totally without sight. During the early spring of that year he had a fever, and while convalescing became gradually blind. He cannot now distinguish the hand between the eyes and the light; said he could see a little at one side of the right eye, but did not close or avert the eye when sunlight fell directly in it. The pupils contracted and expanded with fair promptness, and in walking the head was held down and to one side as though the habit had been formed because pain existed at one time. The mother explained the spirit (ah-pe-dah-ke) had put something in the eye to put it out, what or why, she did not know.

A Methodist minister named Whitman, missionary at Walla Walla, Oregon, was massacred by the Indians under the belief that he had caused a frightfully fatal epidemic of measles that prevailed among them.[1]

In explanation of a cough the Ute philosophy would tell us that an u nú jûts—a pigmy spirit of evil—had entered the poor man's stomach.[2]

Pain.—The Indian is accounted a stoic. To me the explanation is that in the Indian sensation is less acute. The lesion that would cause torture to a delicately organized woman is not felt by the Indians. "Intellectual development renders us sensible to new pain, and causes us to appreciate as pain what to coarser organism is unfelt."

Intoxicants.

It is the popular impression that every nation possesses some drug or drink that intoxicates. This idea is applied directly to the Indian race by Major John J. Powell, Director of the Bureau of Ethnology, in the first annual report of that Bureau (page 40). He asserts that "every tribe has its potion or vegetable drug by which the ecstatic state is produced." This is undoubtedly true of some tribes; that it is true of the majority I am unconvinced. I can state positively that it is not true of the tribe with which I have been most intimately associated, and I have not the slightest evidence that any Northwest tribe possesses or uses any intoxicant save that furnished them by white men. Among these tribes a state of frenzy or exhaustion has for generations been produced, not, however, by drug or drink, but by fasting and torture. In the state thus produced they dream dreams and see visions from which are drawn inspiration and guidance.

Major Powell elsewhere writes:[3] "In the vicissitudes of savage life, with little or no provision for the future, there are times when the savage resorts to anything at hand as a means of subsistence, and then all plants and all parts of plants, seed, fruit, flowers, leaves, bark—anything in time of extreme want—may be used as food. But experience soon teaches the various effects upon the human system which are produced by the several vegetable substances with which he meets, and thus the effect of narcotics is early discovered, and the savage, in the practice of his religion, often resorts to these narcotics for the purpose of producing an ecstatic state, under which divination may be performed. . . . And civilized man has then an inherited appetite for narcotics, to which the enormous propensity to drunkenness existing in all nations bears witness."

Against the assertion of the distinguished writer, that the savage races under discussion are to share the blame in any considerable degree of this "inherited tendency," it will be seen I have taken issue.

The only intoxicant of which I have been able to obtain reliable information is the tiswin made by Apaches and other tribes of New Mexico and Arizona. It is called by the Apaches tool-pie, which word in sound somewhat resembles the Mexican word pulque, and would point to that source for the knowledge of its manufacture. The method of its manufacture by the Apaches of Arizona is thus described by Captain F. E. Pierce, Agent (1886):

"They manufacture from wheat, barley, or corn, an article called 'tiswin,' which produces intoxication of the worst type when used in large quantities. The grain is buried in the ground until it sprouts, after which it is dried and ground, and then, after boiling a short time with considerable water, is put aside to ferment. The bucks fast two or three days while the tiswin is making,

[1] Century of Dishonor, p. 408.
[2] Report of Bureau of Ethnology, 1879-1880, p. 29.
[3] First Annual Report of Bureau of Ethnology, p. 36.

and in that condition a few cups of it will produce the most frantic intoxication."

Of the Pimas of Arizona the agent states that, "during the months of July and September they gather the fruit of the cactus, and manufacture from it their intoxicating drink, tiswin, when whole villages get drunk."

Special Agent E. E. White, in charge of the Kiowa, Comanche, and Wichita Agency, Indian Territory, 1888, gives the following graphic account of intoxication among the Comanches and Apaches under his charge: "During the past two years many of the Comanches and Apaches, and a few of the Kiowas, have become addicted to the use of a fruit which they procure from Mexico, and which is said by them to be the fruit of a cactus that grows along the Pecos River and the Rio Grande, and on the plains of Mexico and New Mexico. Its common name here among the whites is mescal bean. Its size is about one-fourth of an inch thick and one-half inch in diameter; when dry it is hard and about the color of bright tobacco, and it is not unlike tobacco in taste. The centre of the upper side is covered with a coat of gray fuzz. Its effect on the Indian is believed by medical men to be somewhat like that of bangue. It not only makes physical wrecks of them in a short time, but it destroys the mental faculties as well. While under its effect they are in dreamland, and see the most beautiful visions. One of the beautiful hallucinations which it produces is the belief that everything seen in these visions is real. The Indians have come to look upon this bean—woqui, as the Comanches call it—as an oracle, endowed with the power of revelation."

He then relates the case of a Comanche who, suspecting the fidelity of his wife, determined to consult his woqui to ascertain if his suspicion was true, and for inspiration as to the course he should pursue. That night he ate freely of the woqui. It told him to shoot at his wife three times. If he hit her he would thereby know his suspicion was true. If he missed her she had been faithful, and he should continue to live with her and confide in her. By good fortune or bad marksmanship the shots sped wide, and all was well but for the interference of the civil authorities. The Agent naturally concluded that this hallucination "was liable to assume a dangerous form," and he prohibited the use of the bean. The Comanches at first declared they would rather die than be deprived of their woqui, but afterward were induced gradually to discontinue its use.

Of such an effect from the mescal bean I have not heard from other sources, and, while willing to give full credit to the sincerity of the statement of the gentleman who reports this, I am much inclined to divide part of the effects attributed to the bean between the imagination and the fancy of the *habitué*.

With these few exceptions, it must be said that the intoxicants which work such sad changes in Indian disposition and conduct are among the several such gifts brought to him by the white man's civilization. And when I read reports from every quarter of its damnable effects on the Indian, that "about ninety per cent. of the crimes committed by Indians can be traced to whiskey; that the Indian sober is friendly, patient, kind; that drunk he seems to be animated by a wild desire to cut anybody's throat who intimates he is of less consequence than Napoleon Bonaparte;[1] that it has only its evil effects among Indians, and this ten times multiplied; that there is not an inherent need for a stimulant driving a people if deprived of one to find relief in a worse, I am almost persuaded to become a prohibitionist.

The use of tobacco by chewing was, I believe, unknown among Indians, and is very rarely practised now, only two or three men of the Crow tribe using it in that way.

Smoking has been an Indian custom from time beyond history. The Indian is a luxuriant and habitual smoker. The large consumption in recent years of cigarettes procured from traders is undoubtedly injurious. These are used chiefly by the young men and women of the tribe. To get a correct conception of the Indian custom of smoking it is necessary to understand something of their ideas and method concerning it. The pipe is an emblem. In Indian pictography, carried in the hand, it indicates leadership. To "carry the pipe" is to lead the war party. Smoking is a social and religious ceremony. The pipe has a stem from twenty to forty inches long, the excavation in the bowl is two or three inches deep and not usually over one-quarter of an inch in diameter. Even at the present day, when tobacco is easily obtainable, it is seldom used alone, but is mixed in proportion of one-quarter to one-half with native leaves—in this tribe willow or a species of ground laurel resembling uva ursa. An Indian rarely smokes alone. If a dozen smoke together, socially or in council, usually only one pipe is lighted; this is passed from hand to hand around the circle, each man drawing but two or three whiffs before offering it to his neighbor.

It will be seen that the amount of tobacco consumed by any one Indian, and the amount of nicotine absorbed, even in a day's smoking, is very small indeed—rarely as great, I should fancy, as one strong cigar.

The more serious danger growing out of this custom of "passing the pipe," and one against which I have had frequent occasion to warn white men who join their council or social meeting, is not from the nicotine, but from the possibility of venereal infection, carried by the pipe stem from mucous patches on lips and tongue, so frequent in this tribe that rarely a circle is without one such source of infection.

"Medicine" and "Medicine Man."

There is a good deal of misconception concerning these phrases. The Indian words translated "medicine" and "medicine man" seldom refer to drugs, and in the great majority of cases have no connection with disease.

When the word "medicine" is used, nearly always is meant what Major Powell well describes in the following lines:[1] "Every Indian is provided with his charm or fetich, revealed to him in some awful hour of ecstasy produced by fasting or feasting or drunkenness, and that fetich he carries with him to bring good luck, in love or in combat, in the hunt or on the journey. He carries a fetich suspended from his neck, he ties a fetich to his bow, he buries a fetich under his tent, he places a fetich under his pillow of wild-cat skins; he prays to his fetich, he praises it or chides it; if successful, his fetich receives the glory; if he fails, his fetich is disgraced. These fetiches may be fragments of bone or shell, the tips of the tails of animals, the claws of birds or beasts, perhaps dried hearts of little warblers, shards of beetles, leaves powdered and held in bags, or crystals from the rocks—anything curious may become a fetich."

Such fetich or charm is the Indian "medicine."

The application of the word and idea is still more general. I exhibit to an Indian a photograph of himself I have taken. He exclaims *De mak pash bot sots.* "You are strong medicine," meaning that I am skilled in magic.

"Big Medicine," a Crow Indian, and I were riding together. He endeavored to break the ice of a little stream we were crossing to let our horses drink. Our horses were standing on the ice; he could not break it, but as we turned to ride off, the ice fortunately gave way under my horse's feet. "Big Medicine" said, *D'r-sas ke mak pash*, "your horse is medicine."

The Indians do not say "medicine man," but of such a one among them they say "he is medicine," that is, he is charmed, skilled in magic, possesses supernatural power, inspired in thought and deed. He has little to do with sick people save incidentally, he being priest or saviour rather than doctor. If he chances to cure the ill, it is by his "power," and not through skill in physic.

[1] Robert L. Owen, Agent to Civilized Tribes, Indian Territory, 1876.

[1] First Annual Report of Bureau of Ethnology, p. 41.

He does miracles rather than brew potions. He is a factor for good and evil in Indian life not appreciated at his full merit, but he is not in the province of my work.

Others there are who should better bear the name "medicine men" or women. Some are not old and claim some special power of healing; others are the ancients of the tribe, and, like the old men and women of any race, have from their years of experience accumulated some knowledge of treatment of disease, which knowledge, as again in all races, they are most ready to inflict upon the afflicted.

Even these Indian doctors depend more upon the song and the drum than upon physic. The Indian "medicine man" only evidences that Indian tribes are in that stage of development where priest and physician have not been differentiated, a stage through which our own race passed not many generations ago.

These native doctors are much in the way of the success of the Government physicians, and not by governmental edicts of suppression, but by slow and careful demonstration of the superiority of his methods, is the latter to supplant the former; and this will not be successfully done until the Indian Department not only never removes efficient men from the service, but offers to such inducements sufficient to keep them many years in the service.

I shall lack for words to deny here as positively as I would an erroneous popular notion. It is, that Indians have learned from nature many deep secrets in the use of herbs in curing disease. No more unfounded idea ever prevailed. I could name any one of a dozen sensible country grandmothers who know more of the use of teas and bitters and poultices and roots and barks than an entire tribe of Indians. The long-haired man who shouts from the street corner the virtue of his Indian remedies preys upon this groundless idea. Indians are densely and absurdly ignorant of the properties of the numerous useful herbs that grow on their reservations. A few they do use occasionally internally, more often externally; but not half so many nor so wisely as an experienced negro "mammy."

These statements are made after fair investigation. These were fair because they were begun in the hope of learning something of value; but they were fruitless. They have purges, and in several tribes emetics. I heard of syphilis remedies of pretended virtue, but was unable to verify the story.

Some medicines and medical practices are introduced below.

Tobacco bound to a wound or sore I have seen them use frequently; but whether of their own motion or learned from the whites, I do not know.

As a purge the Indians quite commonly use "alkali;" what the chemical composition of this alkali is I do not know. It pervades everything, soil, air, water in this region, and upon the hills in rocky places "spews" up between the rocks as a clean white powder or solid pieces. It is said to act quite freely upon the bowels, tasting in solution like cooking soda. New arrivals in this country are often troubled with diarrhœa from drinking the alkali water.

Blood letting is a common treatment among the Crows. Frequently one of them comes to me for salve to put on the sore in the bend of the elbow from the knife cut for letting blood. I seldom examine the arm of an old Indian that I do not find one or more scars from former punctures. An Indian whom I was treating for gonorrhœa, becoming impatient, called in an Indian doctor, who bled him from the arm.

Calomel, from my observation, acts with unusual violence among Indians, notwithstanding the fact that I often give them three to five drops of croton oil to secure good evacuation.

A method of Indian treatment of disease, the resulting scars from which I have seen frequently, is to take bits of wood, as, say, the end of a match, a quarter of an inch long. These bits of wood are sharpened and pressed into the flesh close together and in regular lines—I have always found the marks on the anterior forearm—then set on fire and allowed to burn down into the flesh. Often over swellings and about wounds I find numerous parallel and crossing lines drawn with charcoal or some pigment.

A sick Indian *strips;* if male, he keeps on only the breech-clout; if female, a single loose slip—a custom for comfort and cleanliness worthy of imitation. When an Indian is ill, defecation and urination are provided for by digging a hole in the ground near the pallet in the tepee, to be filled in with dirt as used.

The Sweat-house.

This institution is an important factor in Indian life—and death—antedating history and being nearly coextensive with the race.[1]

As in most of the affairs of the Indian's daily life, in the sweat-bath is a puzzling mixing of religion and ceremonial with more material effects, until one is in doubt whether it be natural or supernatural aid that is sought. The ceremonial side I shall leave to those who write of the ethnology of Indian disease and medicine.

The sweat house is the most characteristic object of the Indian country, every camping-place and every permanent abode, river side or mountain top, is decorated with one or a dozen of them. The manner of its use will appear from the following:

A few days ago Shē-gŏg-doo'-chis, our chief of police, came to me for treatment for a vesical inflammation. I gave him medicine I thought best suited, and an hour later called at his tepee to see him.

I found another Indian policeman cleaning off the snow near the tepee and putting up the bent sticks that usually serve as the framework for a sweat-house. I found Shē-gŏg-doo'-chis in his tepee, stripped to the breech clout, kneeling over a pan filled with water, into which had been put some hot rocks. He was thus taking a quickly improvised vapor-bath. I advised that he make his sweat-house inside his lodge, not outside, as he was preparing to do. In an hour I returned and found they had constructed a wick-i-up in one corner of the lodge. It was made just as the outside sweat-houses are made.

Stout, supple poles are stuck in the ground, bent over, and the other ends stuck in, forming a rude half sphere, some three or four feet high, and about as much in diameter at the base. This frame is covered with several thicknesses of blankets, a shallow hole is dug in the ground, a fire is built outside—in this case the usual lodge fire served—and half a dozen or more rocks, weighing four or five pounds each, heated. These are put into the hole in the sweat-house. Four or five Indians had gathered in while the preparations were being made. These stripped and entered the sweat-house two at a time, of the first two, Shē-gŏg-doo'-chis, the sick man, being one. None of the other Indians were at all sick; they were going through the process as a preventive.

The two who went in first took with them a bucket of warm water. They wore their breech-clouts. (They rarely remove this garment even to go bathing). They poured the water over the heated rocks, and the structure was at once filled with hot vapor. Thus shut in air-tight for some five minutes, they whipped their bodies with bunches of horsehair or herbs. At the end of this time the well Indian came out, the sick one remaining and being joined at once by another well Indian, who remained with him five minutes longer, when both came out and were succeeded by the other Indians of the party, including a six-year-old boy.

When the well Indians came out they were wet with vapor and perspiration, and the skin red as a lobster and

[1] Bonneville, writing in 1833, describes them among the Nez Perces and other Northwest Indians. Kirk Monroe (Scribner, March, 1890) finds them still in use among the Florida Seminoles.

smoking like a furnace. They went at once out of the lodge into the snow, and, taking handfuls of it, rubbed themselves vigorously for five minutes. They then returned to the lodge, their bodies still red and smoking, and clothed themselves.

When the sick man came out he lay naked upon his blankets, not going out into the snow; this, however, was in deference to my presence, I having advised against it. Usually, no matter how sick, they plunge out of the sweat-house into the snow, or better, into the river, having broken a hole in the ice.

The next day the sick man was better. I saw all of the other participants, and none of them had any "cold" or other trouble. The temperature was 10° below zero.

Notwithstanding the harmlessness in this case, and the undoubted benefit in some cases, my decided opinion as to their serious effect on Indian health is expressed in another chapter.

GRAPHOSPASMUS.[1]

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GRAPHOSPASMUS, from grapho—I write—and spasm, denotes, according to Reynolds, a chronic disease characterized by the occurrence of spasms when attempt is made to execute a special and complicated movement, the result of previous education, such spasm not following muscular action of the affected parts when special movement is not required.

The term graphospasmus is faulty, inasmuch as it does not signify the exact abnormal condition which involves inco-ordination more than it does spasm.

Benedict calls this and analogous affections the professional neuroses of co-ordination; or, as Duchenne has it, there is an impotence in respect to the particular position and movements involved in writing, or any movement the result of previous education; there is no lack of ideas, no disease of intellect, and the motorial apparatus is intact except as regards the particular movement or movements.

We have three different forms of the affection, viz.: 1st, a spastic; 2d, a paralytic; 3d, a tremulous form—the paralytic form being often associated with sensation of pain—the difference in the varieties being rather of degree than of kind.

As a rule, the part affected is the hand, although in a few cases the foot was the seat, and in one instance in a professional clarionet-player, the tongue was affected. Where the hand is affected a curious feature is a change in the nutrition of the nails, which points, of course, to nervous agency.

In a typical case the clinical history is about as follows: A period of overexertion of the hand, coupled usually with anxiety of mind, the muscles become fatigued, the writing changes in character and becomes irregular; finally the muscles refuse to do their work, they do not co-ordinate in movement, and other muscles are called into action.

Normally, in writing, the supervision of the higher centres cease and writing becomes automatic, but when the above disability occurs the attention must again be directed to the act. Usually the growth of the affection is slow, but may be sudden, as after prolonged exertion. As the literature on the subject is very scant, there is no reliable means of estimating the frequency of the affection; but judging from the number of instruments and machines in use which require educated movements there is reason to believe it more frequent than is generally supposed.

It is very desirable that we recognize the importance of this affection as a precursor or forerunner of more serious diseases either of the nervous or other systems; nearly all authors agree on this point, and here again we lack statistics or information as to the number of cases in which other disease followed, the affection being an evidence of depressed vitality; as a rule, the number is probably large.

Regarding etiology, our knowledge on the subject is largely theoretical; the numerous theories may be divided into, 1, centric, and 2, peripheral or myopathic. I will briefly mention a few of the most plausible. Duchenne rather vaguely states that the cause is central, but that there must be a predisposition, and says that when the unaffected hand is called into action it often becomes affected, which proves nothing. The late Mr. Solly, of England, advanced the theory that the cause was granular disintegration of the cervical portion of the spinal cord; another, that there is loss of irritability of muscle, and that the use for purposes other than writing is more apparent than real; Burdon-Sanderson, that the lesion is situated in the corpus striatum; while Dr. G. M. Poore, of England, holds the cause to be peripheral, and states that muscles which are trained to work together fail when one of them no longer does so. Bartholow also advocates the peripheral theory.

The Solly theory, if I may be permitted to call it so, that the cause is granular disintegration of the cervical portion of the spinal cord, that is, the posterior white columns, which include the columns of Gall and Burdach, is objectionable because—1, The disease sometimes comes on suddenly, whereas granular disintegration of the spinal cord would necessarily take more or less time; 2, change in the cord would be likely to produce more pronounced constitutional effects than we get in graphospasmus; 3, if taken in time, rest will cure a good many of the cases, but it is hardly reasonable to suppose that rest will restore the cord if granular disintegration has taken place.

The theory that there is loss of irritability of the muscles has no basis; it is simply built on sand, out of very poor material, as it is very evident to anyone investigating the subject that the difficulty in co-ordination lies only in executing the particular movement or movements, and that muscular action in other respects is normal.

Irritation or injury of the corpora striata is followed by general rolling or turning movements, and they may in some way be connected with co-ordinate movements of the hand; but they are principally interesting from the fact that Willis thought the soul of man resided therein. The myopathic theory, if we take this as meaning disability of the muscle proper, it is not fact; as stated before, they act normally except as regards the particular movement; or if we take it as meaning that the cause is situated in the peripheral distribution of nerves, it will not bear careful investigation.

It is agreed by all physiologists of any standing that the great co-ordinating centre is the cerebellum, the white columns of the spinal cord being also involved principally as conductors. I now put forward the theory that we have in the cerebellum distinct focal centres of co-ordination similar to the motor focal centres in the cerebrum, and likely subordinate to the same. If this is fact, irritation or disease of such a centre, presiding over co-ordination of the hand, would produce muscular action similar to what we get in graphospasmus.

It has been shown that extirpation of the middle lobe of the cerebellum is always attended with inco-ordination; but when parts other than the middle lobe are injured it is possible for co-ordinate movements to take place after the primary effect has passed away, proving, in a sense, that the middle lobe has more to do with co ordination than other parts.

Unless I am mistaken, there is not a single case on record where the patient was followed up and an autopsy made; it may seem a very trivial matter to make an autopsy for, but will not the knowledge of the exact causation of this affection give us, to some extent, knowledge of some of the neuroses, the causation of which, at present, is obscure, and will it not be very useful to the physiologists? If we are asked, for instance, at the present day, the etiology of paralysis agitans, we would have

[1] Read before the New York County Medical Association.

to plead ignorance; we do not even know whether it is situated in the cord or brain.

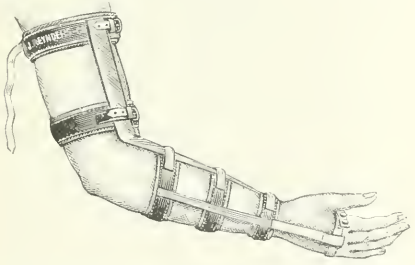
Regarding diagnosis, there is no difficulty in recognizing the affection, though it might possibly be confounded with multiple sclerosis, beginning muscular atrophy, or agraphia. The polymorphous character of multiple sclerosis renders it peculiarly liable.

The prognosis in regard to cases which become chronic is not good. A large percentage never recover the normal use of the hand, and some patients, therefore, have to change their occupation.

In treating, we may try the following: In the acute form, rest will cure a good many cases.

Bardsley, of Manchester, England, recommends sleeping on an inclined plane, the head of the bed being twelve inches higher than the foot; this method is not very successful. Nussbaum has lately invented a kind of bracelet to which the penholder is attached, to be worn during writing, which is effective in acute cases.

Referring to electricity, faradism undoubtedly does harm; galvanism only should be used; avoid all strong currents, apply the stabile anode to the brachial plexus and to the different nerves and muscles for five minutes at a time, place cathode in the vicinity of cervical vertebræ. Pain should be treated specially; hypodermics of strychnia or atropia injected into the muscles will be of benefit.



Two methods of treatment remain to be mentioned, both of which, I think, are original.

First, I will briefly mention a surgical operation by which we can divide some of the flexors of the carpus and get union between the belly of one muscle and the extremity or tendon of another. Of course this will distort the anatomical relations, but it will have a tendency to prevent the inco-ordination, and is not very intricate; and second, the apparatus which I present to-night.

Four months ago a patient came to me with the following history: About seven years previous, after working very hard at his business, which was that of dry goods, he became sensible of fatigue, and later movements of the right hand became inco-ordinate. I must here state that the method of folding some kinds of dry goods call into play a certain set of muscles in a certain way. On examination I found that a spasm of the flexors of the carpus took place on voluntary motion, there being also a weakened condition of the flexors of the forearm.

As the patient had been under the care of some eminent neurologists, and had for a long time been taking a liberal supply of drugs, faradism, etc., I came to the conclusion that only something mechanical would help, and remembering that when a student I had studied the muscles of mastication by means of a skull and small pieces of rubber, after some deliberation I devised the following apparatus: Five bands of soft leather were made to buckle on the limb, two on the arm, and three on the forearm, the upper band being situated about the insertion of the deltoid muscle and prevented from slipping by means of a small strap attached to a shoulder-brace; the lower one at the wrist. A strong piece of rubber about two inches wide was attached to the upper band, and passing through loops on the intermediate bands, was inserted into the band at the wrist in such a manner that when the forearm was flexed the rubber was lax, but when extended, was put on the stretch. To overcome the spasm of the flexors of the carpus, a small band of calfskin was passed around the hand, just behind the knuckles, and secured on the palm by a clasp; to this carpal piece, on its dorsal surface, was attached, at right angles, a small strap of calfskin, which was continuous with a piece of rubber, which in turn was sewed to the leather band just below the elbow, in such a manner that when the carpus was extended to its fullest extent the rubber was lax, but when flexed, even to a small extent, the rubber was drawn taut or stretched, thereby overcoming the spasm.

At first, instead of the leather bands I used two paper splints, after the manner of Dr. J. Marshall Hawkes, of this city, one on the arm and the other on the forearm. With modifications the mechanism is applicable in a large number of cases of paralysis and allied affections, notably to the lower extremities in locomotor ataxia; it is not cumbersome or bulky, can be worn over the sleeve of any ordinary shirt, and is not conspicuous, only the carpal pieces showing below the coat-sleeve.

Coupled with tonic treatment and galvanism it has improved the condition of the patient by giving confidence in executing movement and controlling inco-ordination to a certain extent.

The apparatus was made by Reynders & Co., of New York.

221 West Twenty first Street.

NOTES ON TWO CASES OF SPONTANEOUS INTERMITTENT HEMORRHAGES.[1]

By A. BROTHERS, B.S., M.D.,

PHYSICIAN TO THE OUT-DOOR BUREAU OF RELIEF OF BELLEVUE HOSPITAL.

Case I.—Lizzie K——, aged nineteen, single, under observation since the latter part of 1887. Her family history is negative. Parents are both alive and well. No bleeders remembered in grandparents or parents. One brother and two sisters are enjoying good health, and are not prone to hemorrhages. In the patient's personal history the first illness experienced was measles, at the age of two. At nine she went through an attack of scarlet fever and diphtheria. Shortly afterward she suffered from pain and swelling in the lower limbs. At eleven she was first troubled with dyspnœa. At twelve, the symptoms on which the chief interest in her case centres, namely, the spitting of blood, began. This came on imperceptibly without any special illness or traumatism to mark its advent. Ever since their first appearance, seven years ago, these hæmoptyses have, with certain periods of relief, been almost of daily occurrence. For long periods at a time she has averaged six to twenty a week. She has each year, for three years past, enjoyed immunity for several weeks at a time, while spending the summer at Lancaster, Pa. The quantity of blood brought out at a time is never very great, never more than a teaspoonful. It is bright red in color, aërated, usually fluid, but sometimes comes up in small clots. It is neither coughed up nor vomited. There is simply a slight gagging sensation, followed by the hawking up of the blood. In 1890 she first became unwell. After remaining absent for about six months, the period again came on, and recurred regularly each month up to six months ago. Since then she has suffered from metrorrhagia. The menstrual flow returns every two weeks, and lasts a week, during which five or six napkins are saturated daily. During several weeks in 1889 she suffered from persistent bleeding from the right nostril. Beyond these hemorrhages she has never suffered from unusual bleedings after traumatisms, or otherwise. Among other symptoms which have disturbed her, pain in the left side has occupied a prominent place. Although never confined to bed with polyarthritis, she has frequently suffered

[1] Read at a meeting of the Associate Alumni of Bellevue Hospital, April 6, 1892.

pain, occasionally with swelling in the fingers, wrists, elbows, and knees. As long as she has been under my observation she has been subject to headaches, dyspnœa, and palpitation. Although her temperature has always been normal, her pulse has always beat too rapidly. Five years ago her pulse-rate ranged between 120 and 130; at present it counts 80 to 100. It has always been of good volume and regular. In June, 1889, she began to suffer from "fainting spells." Without any premonition she would suddenly lose consciousness and fall. These attacks recurred a number of times, daily or weekly, and on one or more occasions happened while on the street. For the past six months she has been free from these attacks. For a period of six weeks, recently, she suffered from a continuous pain in the right temple, severe enough to interfere with her nightly rest. This has now left. In spite of all these disturbances her general health did not for a long time suffer. Her appetite, complexion, and strength were good. Although of small stature—her mother is also a small woman—her form is well-rounded, and shows a fair amount of adipose tissue. Within the past year the continuous drain from the hæmoptyses and metrorrhagia have begun to tell on her. At times she has been quite anæmic, the healthy color of her cheeks has turned sallow, and her lips have become whitish. Her appetite lately has been quite poor at times.

In regard to the results of physical examination there is little to be said. Four years ago Professor A. Jacobi examined the girl and thought he found slight consolidation of the right apex and a faint mitral systolic murmur. He has been kind enough to examine the girl again a few months ago, and writes that he no longer finds the mur mur and believes the consolidation has melted away. Therefore we cannot attribute the hæmoptyses to either cardiac or pulmonary disease, for, surely, after five years, during which time the patient has been continuously under our observation, some signs at least of a progressive disease of heart or lungs would have manifested themselves. Nor is there any evidence of disease of the pharynx or larynx to be found. Repeated local examinations by Dr. Allen, laryngologist to the Out-door Bureau of Relief of Bellevue Hospital, have failed to locate the source of bleeding in the upper air-passages. Hence we are driven to the conclusion that our patient is suffering from a disease of the blood-vessels—general incompetency or hyaline degeneration (according to Professor Jacobi)—which has restricted itself to a certain set of blood-vessels, leaving the vascular system elsewhere apparently intact. It is possible that the metrorrhagia is to be explained in the same manner, for a local examination has failed to discover any other cause.

In the treatment of this case all of the hæmostatic drugs known to medical science have been used without avail. The only measures which have afforded temporary relief have been either complete rest in bed for weeks at a time, or complete change of surroundings by a visit to the country, which has only been possible during the summer months. At present she is under a prolonged course of treatment with arsenic as a tissue-builder, and ergot to keep her blood-vessels well contracted.

In concluding the history of this interesting case allow me to recapitulate the following facts: 1. Absence of a family history of hæmophilia. 2. Occurrence of joint symptoms from an early period. 3. Hæmoptyses for the past seven years. 4. Complete absence of physical signs pointing to disease of the heart, lungs, or other organs. 5. Metrorrhagia of a severe type. 6. Epistaxis, at one time lasting many weeks. 7. Rapid heart-action. 8. "Fainting spells." 9. Slow impression on the general constitution.

Case II.—Mr. B——, aged forty-five, native of Russia; married, father of five healthy children. Family history is negative. His father died suddenly of heart failure at the age of seventy. His mother is still alive, having again married and given birth to a number of other children, all of whom are said to be healthy. Excepting a tendency to readily bleed from the gums, our patient does not remember any severe hemorrhages during early childhood. No other members of his family have been subject to hemorrhages. At the age of twelve months he is said to have suffered from a severe attack of inflammation of the brain. To the excessive administration of calomel during the course of this disease was attributed an extensive destruction of the palate, which, for many years, interfered with speech and deglutition, and which has left a distinct nasal twang to his speech to day. At the age of fifteen years he was taken to Königsberg, where he underwent two plastic operations at the hands of Wagner and Bure, as a result of which his palate is now almost perfectly intact. During the operations no anæsthetic was used, and he claims that he lost a very large quantity of blood. At the age of twenty-four he remembers being very much troubled for a period of four or five months with bleeding gums. The following year was a critical one in his life. Without premonition he one day suddenly began to bring up large quantities of bright red blood through the mouth and nostrils. Being in affluent circumstances he consulted no less than seven of the most eminent physicians on the Continent, including Professors Traube and Skoda. Five of them located a lesion in one lung, but two failed to find any pulmonary trouble. He was ordered to various watering-places and followed a quiet life. For a period of eighteen years all went well. He got married and had five children. Three years ago a series of reverses, due to governmental persecutions, began, and from being a very wealthy man he suddenly became quite destitute, and decided to leave his native soil. In May, 1889, he consulted Professor Nothnagel, of Vienna, as to any possible danger in the change. He pronounced him, after careful examination of heart and lungs, perfectly sound. Shortly afterward, at Paris, he noticed he was passing fæces of a black and tarry nature. He consulted a physician, who, without examining the passages, decided they were due to an iron tonic he was taking. He then crossed to this country, where he began the first genuine work of his life as a pedler. A year ago he noticed he was again passing this same black, tarry matter in his stools. This kept on for several days, when suddenly he was taken with hæmatemesis, during which he vomited nearly a basinful of blood, after which he passed into collapse. I saw him now for the first time, and requested Dr. A. Jacobi to examine him in consultation. He confirmed the existence of an apparently healed-up, ancient, consolidation of the right upper apex. We were sure, however, that the blood came from the stomach, and, although there was complete absence of local pain or gastric symptoms, we inferred the existence of an ulcer of the stomach. It may be here parenthetically remarked that he completely denied ever having suffered from any gastric symptoms whatsoever. Under ice locally, and morphine and ergot internally, the hemorrhage was soon under control. After a few weeks in bed he was allowed to get up, particularly as there was no further trace of blood by stomach or bowels. He remained perfectly well for six months, being able to attend to his business without interruption. Then, without any assignable cause, he again noticed, for several days, the tarry black passages, which were, as before, followed by the vomiting of large quantities of blood. He rapidly passed into a condition of profound collapse, and we despaired of his life. The same treatment was resorted to, and with good result, for in a very few days the vomiting ceased and the blood disappeared from the passages. The gums, however, were quite spongy and bled very readily. This time he remained in bed for nearly two months. I ordered him to lead a very quiet life, to be very careful of his eating, and not to resume his work.

In spite of these precautions, toward the middle of January of the present year—after having spent four months in good health—he again noticed the peculiar black and tarry passages. I at once ordered him to bed,

with ice to the stomach, and the same internal treatment as before. Despite our care he passed into a condition of marked collapse; he became intensely cold and anæmic, the pulse became small, ranging between 120 and 130 per minute, and, although no sign of blood was visible externally, there was no doubt of internal hemorrhage. A continuous gagging sensation was kept in check by cracked ice, and the bowels were kept costive. After a week he was rallying nicely, when, to relieve the constipation, an enema was ordered. He passed a large-formed movement of jet black color, followed by a little free blood, and then went into the worst condition of collapse he had yet experienced. The surface and extremities became cold, the face assumed a ghastly hue, the voice became reduced to the faintest whisper, and the pulse was too small and rapid to be accurately counted. With this tenesmus came on, accompanied by the passage of dark red fluid blood in small quantities. There was no doubt of fresh internal hemorrhage. Under ice, morphine, lead, and digitalis, freely given during three days, he gradually emerged from his dangerous condition. At the time of the last hemorrhage he complained of a pain, with stiffness, in the right intermaxillary articulation, and for a number of weeks he could hardly separate the jaws. This symptom is now entirely well. For a time he ran a low fever of 100° to 102° F. (axillary). At no time has he suffered from epistaxis, hæmaturia, or petechiæ. Careful and repeated examinations by Dr. Jacobi and myself failed to reveal any growth in the abdominal cavity, or any gross lesion to which the gastro-intestinal hemorrhages could be attributed, and, in view of the history of former hemorrhages, dating as far back as twenty years, we came to the conclusion that the patient was suffering from disease of the blood-vessels in the region of the stomach and duodenum. Within the past four weeks a hard tumor, the size of a hen's egg, has become evident in the epigastrium. This is situated rather to the left, moves most with inspiration, and is apparently connected either with the stomach or the left lobe of the liver. It is probably carcinomatous. The patient is still very weak, very anæmic, and much emaciated. He is under treatment with methylene blue, but thus far he has rallied much more slowly than from the former attacks.

In reviewing the history of this case I would draw attention briefly to these facts: 1, Absence of family history of bleeding; 2, early appearance of bleeding of the gums which has recurred from time to time; 3, pulmonary (?) hemorrhages twenty years ago; 4, complete immunity for eighteen years; 5, probable passage of blood in the fæces three years ago; 6, three attacks of gastro-intestinal hemorrhage during the past year, separated by months of apparently perfect health; 7, arthritis of the intermaxillary joint; 8, insidious development of carcinomatous (?) growth; 9, the possible connection between the condition of the blood-vessels generally and the tendency to carcinoma.[1]

A few remarks on hemorrhage may not be out of place. In general, hemorrhages are either traumatic or spontaneous. With the former we are not concerned at present. The latter variety may depend on lesions which are demonstrable or not. Tuberculosis, carcinoma, simple ulcers of the gastro-intestinal tract, may be mentioned as the most frequent causes of spontaneous hemorrhage, due to distinct lesions, which can be readily seen. Among the less easily demonstrable causes of spontaneous hemorrhages are those due to disease of the blood-vessels themselves. Predisposing causes in such cases have been attributed to anæmia of infancy, congenital syphilis, hæmophilic diathesis, arthritic diathesis, cold and fatigue, malaria,[2] with its tendency to induce hæmaturia, indulgence in certain articles of food, such as asparagus[1] and rhubarb,[2] have all been accused of predisposing or exciting hemorrhages.

In the first case presented to-night I believe the cause of the hemorrhage to lie in the condition of the blood-vessels—some change not visible to the naked eye. In the second case the intra-abdominal growth may account for the hemorrhages of recent date, but would the man have lived so long and with so few symptoms if this tumor were the cause of the hemorrhages occurring over a year ago? In regard to the hemorrhages of twenty years ago, we are justified in assuming that they were due to a pulmonary lesion at that time. But, with the tendency to bleeding from the gums, are we not justified in suspecting an underlying disease of the general vascular system?

The two cases are somewhat suggestive of hæmophilia. Although the pathology of this disease is not positively determined, it is fairly assumed to be due to three causes: 1, Deficiency in the quality of the blood; 2, deficiency in the structure of the walls of the blood vessels; 3, a possible excess in the entire volume of the blood. The cases resemble hæmophilia in the ease with which the hemorrhages are repeated and in the presence of arthritic symptoms. The difference lies in the absence of a family history—hæmophilia being the most hereditary of diseases—and in the absence of a tendency to violent hemorrhages after traumatisms. The case of the girl very closely resembles one lately reported by Sir Andrew Clark,[3] and attributed to the arthritic diathesis, in which there were recurrent hæmoptyses, without any lesion to account for them, *i.e.*, no coarse anatomical lesion of heart or lungs was demonstrable.

In early childhood the changes which may occur in the blood-vessels are of two varieties: 1, Congenital incompetency or thinness of the walls; 2, disease or alteration of those walls. According to A. Jacobi,[4] "there are blood-vessels so thin and incompletely developed, and integuments so poorly formed that bleeding will now and then make its appearance spontaneously." He refers to the case of a baby, in which the blood would trickle from the surface of the lower extremities like perspiration, in drops, day after day, until the baby died. Trousseau and Virchow alluded years ago to such congenital thinness of the blood-vessels as a cause of hemorrhage and chlorosis. Nor is this condition rare, for in all children the blood-vessels are naturally thin, and it is the exaggerated thinness which becomes pathological. Such cases have been examined post mortem and described by Klebs, Weber, Cruveilhier, Voigtel, and Dieulafoy. Hereditary syphilis may produce a hemorrhagic diathesis by defective general tissue-formation. Congenital atheromatous degeneration of the blood-vessels is quite rare, but has been known to occur. Cases of this nature have been reported by Montard, Martin, Sanné, and Jacobi. As a result of the anæmia of childhood, blood-vessels may become thin and undergo fatty degeneration (Ponfick). Lastly, another form of degeneration of the walls of the blood-vessels is that described by P. Meyer as "hyaline" degeneration. To this variety of vascular disease Hoffmung attributes a case of aneurism in a branch of the pulmonary artery in a baby of ten months, which died of hæmoptysis.

The two patients presented to-night are specimens of some of the difficult cases we are apt to meet with in practice. They prove the wisdom of never jumping to a conclusion in a hurry. They suggest the necessity in all doubtful cases of patiently waiting and watching till time clears the mist which surrounds the true state of affairs.

162 Madison Street.

[1] Since writing the above the patient began to waste away, and finally died of exhaustion. No autopsy was permitted.

[2] See case of hæmophilia, attributed to malaria, by Koch, British Medical Journal, 1890, vol. i., 1301.

[1] Reginald Harrison mentions a case of profuse hemorrhage of the bladder after excessive indulgence in asparagus, Medical Annual, 1891, p. 238.

[2] E. H. Fenwick (ibid.) regards rhubarb as a sufficient cause to produce the same result. [3] See Medical Annual, 1891.

[4] Most of the material of this paragraph is taken from two excellent monographs by A. Jacobi, on Extra-Cranial Aneurism in Early Life (Verhand. des X. international medicin. Congress, Berlin, 1891), and Heart and Blood-vessels in the Young (Brooklyn Medical Journal, March, 1888).

Clinical Department.

THE TREATMENT OF CHOLERA.

By EDMUND CHARLES WENDT, M.D.,

NEW YORK.

(Concluded from p. 339.)

The Treatment of Well-marked Cholera. — Although we have repeatedly expressed ourselves to the effect that we have practically no power to always arrest a fully-developed attack of Asiatic cholera, nevertheless the principles which should guide the physician's recommendations and actions seem to us to be plain and unequivocal. The enforcement or even encouragement of any rigid theoretical plan of dealing with the unfortunate subjects of a pronounced attack seems utterly reprehensible.

As in other diseases, so too in cholera, the most reliable indications for medical interference are furnished by a knowledge of the disease-processes underlying the symptoms observed by the physician. Accordingly, if it becomes evident that the normal absorbent functions of the gastro-intestinal surfaces are completely reversed, it is worse than useless to introduce large quantities of powerful drugs and stimulants either from above, or (as has been quite recently often done) from below. We say worse than useless, for the reason that the uncertainty in duration of the different stages of cholera makes it possible for reaction to occur with enough medicine or alcohol, or both, in the alimentary canal to kill the weakened patient, by suddenly acting upon his system immediately after the rapid revival of absorption. There is not the slightest doubt that sudden death, so frequently observed shortly after apparent reaction, has been due in some instances to such causes. The oral administration of drugs is, therefore, only indicated while intestinal absorption continues. Again, the subcutaneous connective tissue so quickly shrinks during collapse that its power of absorbing is largely reduced or completely suspended.[1] Nevertheless, whenever potent remedies are demanded, hypodermic injection offers a better chance of effective medication than the swallowing of mixtures, pills, or powders, and also than the much vaunted enteroclysis of Cantani and other recent Italian writers.

Knowing, then, that the internal use of drugs during collapse is of no avail, it seems unnecessary to enumerate the countless host of remedies that have been and continue to be recommended by writers of all nationalities.

Before the occurrence of collapse, and during the stage of profuse discharges, it is generally advisable to administer small doses of morphine hypodermically. This may at least to some extent quiet the patient and diminish his sufferings. But the drug should never be "pushed," as, for example, is commonly done in peritonitis. For the relief of persistent thirst small quantities of iced fluids, such as plain water, carbonic acid water, and especially water weakly acidulated with mineral acids or freshly expressed lemon-juice, and similar drinks, may be frequently given. Little bits of ice taken every few minutes are also allowable.

Some writers have insisted on completely withholding these harmless and grateful beverages, believing that they increased vomiting and favored the intestinal flux. But there is not the slightest foundation for entertaining such an opinion. Indeed, it would be downright cruelty to refuse the momentary relief that cool drinks often give the patient. It is only too true that thirst is not quenched thereby, and that the stomach may immediately reject the eagerly swallowed liquid.

Yet, in some cases the relief is so apparent that we have no hesitation in affirming it to be the physician's duty to see that drinks are not withheld. In well-marked collapse it is best to stop all medication. Moreover, in this condition heat applied to the body, frictions, embrocations, and similar well-known measures, have no power to call back to the surface the fast-ebbing tide of warmth. But before that time such measures may be employed to advantage. Semmola has strongly urged the warm bath, repeated every two or three hours, as a possible preventive of collapse. Yet this must often be fatiguing and injurious. He admits, also, that to bathe a patient during collapse would have no more effect than to deal similarly with a corpse. But on the other hand, he insists that the warm bath has a calmative effect, and a rallying influence, especially noticeable in the stage of premonitory diarrhœa.

Dr. J. C. Peters has used pieces of unslaked lime, wrapped in wet cloths and put in bowls under the bedclothes, successfully in incipient collapse. The heat produced is very great and grateful, and there may possibly be some disinfecting power in this process. A pack in blankets wrung out in hot cayenne or mustard water is useful; and it is very easy, when the blankets cool or dry off, to pour very hot water upon them without removing them or disturbing the patient. Slaking lime used in the way just mentioned is easy of application, and does not tire or weaken or disturb the patient.

An energetic doctor once gave his collapse patients a hot bath, made them drink all the hot water their stomachs would hold, and then pumped not only their bowels but their bladder full of hot water, and complacently said if anyone could do more to warm a patient up he would like to hear of it. We can only add, slaking lime in bed (Peters).

Semmola directs that the temperature of the water used for the baths should not fall below 100° F., nor much exceed 104° F. If the muscular cramps prove rebellious to gentle frictions with warm flannels or slightly stimulating or anodyne liniments, if they remain uninfluenced by a hypodermic injection of morphine, the physician may allow the inhalation of chloroform carried to the point of partial anæsthesia. This may be repeated from time to time without fear of disastrous effects on the heart. But unless thoroughly reliable and competent trained nurses be in waiting, the attending or some other physician must personally direct its administration.

Dr. Maclean[1] says that "cramps are best relieved by the use of chloroform, given in doses of five or six minims in a little water, and if vomiting be excessive a little may be sprinkled on a pad of lint covered with oiled silk or gutta-percha tissue, and applied to the epigastrium; or spongio-piline may be used for the purpose. I have used chloroform in this way both externally and internally, very freely, and always with good effect."

Dr. Macnamara speaks strongly in favor of chloroform. Having pointed out the great importance to the patient of procuring rest, he says: "In furtherance of this latter object, I know of no remedy more efficacious than chloroform. If the patient is in much pain and very restless, I strongly advise his being placed under the influence of this anæsthetic. The chloroform must be administered by inhalation, and its full effects may be safely induced; or at any rate, we may put the patient into a sound and comfortable sleep. . . . We must be prepared to continue the action of the chloroform, perhaps for four or five hours, or even longer, according to circumstances."

Dr. Parrot[2] also favors the employment of chloroform in cholera. He used one to two drachms of chloroform daily in severe cases, and less in mild ones. The vehicle was water one hundred grammes, and syrup of quinine twenty grammes. This mixture was given in tea, a tablespoonful every half-hour; at the same time iced beef-tea was given very frequently in small quantities. Warmth was applied to the skin, and dry and stimulating frictions were used. Chloroform given in this way calmed the

[1] Still subcutaneous injections of weak acid water, or even of salt and water, have at times appeared to stem the tide of outflow from the bowels, as tonics and astringents acting from behind.

[1] Lectures on the Treatment of Cholera, by Deputy Inspector-General Maclean, M.D., Professor of Military Medicine, London Lancet, February 3 and 17, 1866.

[2] Gazette hebdomadaire, December 8, 1865.

anxiety and epigastric pain, and seemed to diminish the frequency of the vomitings, which were also less painful.

Dr. Hartshorne,[1] in 1854, spoke as follows concerning the use of chloroform: "Experience has shown that, taken into the stomach, it is as totally free from danger as any other drug; and its employment is destined to be yet much more widely extended; a fluid-drachm of chloroform taken by the stomach is not more than equal, in soporific effect, to thirty or thirty-five drops of laudanum. In doses of fifty to seventy-five drops (about fifteen minims), I have given it every half-hour for several hours together. It differs from the opiate preparations in the promptness of its hypnotic action, the much shorter period of its duration, a less degree of cerebral oppression, and the absence of all stimulus to the circulation. It might be called a "diffusible narcotic," comparing in this respect with opium as ammonia does with alcohol. To produce much effect with it, repeated doses at short intervals will be necessary. Its pungent property causes it to require plentiful dilution, which is of course facilitated by the action of some demulcent. Perhaps the orgeat syrup is the best. Every fluid-drachm of chloroform should have at least two fluid-ounces of water with it when taken; and it will need, if in ordinary gum mucilage, considerable agitation to re-suspend the particles immediately before swallowing. When taken in aqueous mixture alone, however, unless in very small doses, it produces nausea with some persons. This is entirely prevented by the addition of a strong aromatic, or still better by giving the chloroform in aromatic tincture. From the ready solution and kindred action of camphor with chloroform, their combination has become a very common one. For many purposes, however, a still better preparation is a sort of chloroform paregoric, or compound tincture of chloroform, *e.g.*: ℞. Chloroform, f ʒ ij.; sp. camph. et tinct. opii, āā f ʒ jss.; ol. cinnamon, gtt. viij.; alcohol, f ʒ iij. M. et fiat tinctura. Dose, from five to thirty minims, or more, as required. The most admirable effects have been witnessed from the administration of chloroform, as above combined, in malignant cholera.

Recently Dr. M. Desprez[2] has also advocated the employment, both externally and internally, of chloroform. He believes that by this means from eighty to ninety out of every hundred persons in the algid stage of cholera could be saved. He bases this extravagantly hopeful view on his own experience, and on that of other physicians in Asia Minor, India, and Cochin China. The following is his formula:

Chloroform	1 gram (15 minims)
Alcohol	8 grams (2 drachms)
Acetate of ammonia	10 grams (2½ drachms)
Syrup of hydrochlorate of morphia	40 grams (1¼ ounce)
Water	110 grams (3½ ounces)

Dose: A tablepoonful every half-hour.

Without sharing Desprez's sanguine views, we nevertheless have reason to believe that chloroform may often be used with advantage, especially for purposes of inhalation. But ether is objectionable, and nitrite of amyl, either inhaled or injected beneath the skin, has not realized the expectations that were formed concerning it.

Another common symptom that may become so distressing as to require the inhalation of chloroform, is singultus. But before having recourse to this means, the hypodermic use of morphine, an epigastric sinapism, a spice poultice, or a blister should be tried to stop the hiccough. Where there is reason to believe that a limited amount of absorption still takes place in the alimentary canal, various stimulants may be administered in a tentative way, in order to secure the prevention of collapse. Alcoholic beverages, such as Burgundy, Tokay wine, port wine, brandy and water, or champagne, may then be given. In the same way, if indicated by the condition of the patient, various excitants, such as the ammoniacal preparations, camphor, and musk, may be employed. But, as previously pointed out, if collapse comes on in spite of their moderate exhibition, they should be at once discontinued. Even then an attempt to stimulate cardiac action by the hypodermic use of similar medicaments, including brandy and ether, may be made. But this too must not be persisted in.

Obviously, it is impossible to lay down fixed rules for the guidance of the practitioner in this direction. But, as already stated, the general principles governing intelligent action are by no means as obscure as might be supposed from the confused and conflicting statements of many authors.

The writer may be permitted to say here that he strongly deprecates the blind tapping about among various supposed remedies, in the vain hope that a lucky accident may result in the discovery of a really curative agent. The physician should make every honest effort to stay the march of the disease by employing those means the action of which he is familiar with. But to use the living bodies of cholera patients as suitable material for blind pharmacological and other experimentation seems to the writer as irrational as it is inhuman; nevertheless, perhaps in desperate cases apparently desperate means are allowable, provided always they be neither cruel nor irrational.

Treatment During Reaction.—If the patient rallies from his collapse and enters with a flickering flame of uncertain life upon the period of reaction, the great value of careful nursing and strict diet is, if anything, more apparent than ever before. Drugs avail little or nothing. Small doses of opium are sometimes given with advantage, but as a general thing the patient will fare better without narcotics. Solid foods are absolutely dangerous. Fluids, however, may be allowed somewhat liberally. Milk at first diluted with plain water or carbonic acid water, egg-water, decoctions of arrowroot, sago, or rice well strained and seasoned with plenty of salt, are all to be commended. After a few days, broths and soups thickened with oatmeal, rice, barley, or farina may be allowed. Coffee and tea may now also be permitted in a more concentrated form. Gentle stimulation by generous wines will be found necessary in many cases. Only very gradually, however, can a diet consisting of soft-boiled eggs, meats, concentrated soups, bread, and potatoes be resumed.

Relapses are to be treated with the same caution and on the same principles as the primary attack. When it is remembered that the brunt of the battle had to be borne by the gastro-intestinal tract, the pedantic supervision of the patient's diet will appear not only pardonable but absolutely essential.

Again, in *the management of complications and sequelæ*, the fact should not for a moment be lost sight of, that just as in typhoid fever, so too in cholera, the healing of intestinal lesions must not be jeopardized by a careless allowance of too much or improper food. Lebert says truly, "Indigestion is as fatal in the convalescence of cholera as in typhoid fever."

Having pointed out the necessity of keeping in mind the weakened condition of the gastro-intestinal apparatus, it appears unnecessary to burden this account with detailed directions concerning the treatment of the various morbid states that complicate or follow an attack. The intelligent practitioner will apply the same general principles to this task that guide him in the management of those conditions when not connected with cholera.

The typhoid stage is properly a complication or sequel of the period of attack, and a more or less profound renal disturbance is generally the dominant symptom of that condition. If hot drinks and the induction of perspiration by the use of the wet pack and warm blankets do not relieve the kidneys, it is only exceptionally proper to try more energetic remedies, such as diuretics and pilocarpine. If the patient does not pass any urine within thirty-six hours after reaction has commenced, Macna-

[1] American Journal of the Medical Sciences, January, 1854.
[2] Du Traitement Rationnel de la Periode aiguë du Choléra Asiatique. Paris, 1884.

mara is in the habit of prescribing the tincture of cantharides as recommended by Dr. Francis. He gives ten minims in an ounce of water every half-hour until six doses have been taken. He adds: "If this treatment does not cause urine to pass, we must, after the sixth dose, discontinue the medicine for twelve hours, and then repeat it in precisely the same way, giving six doses more, ten minims each. . . . I have seen this treatment followed by the most satisfactory results in very many cases." Finally, the cautious exhibition of digitalis, which is also a heart-tonic, should not be overlooked at this period.

THE INTERNAL USE AND DOSAGE OF LYSOL.

By ERIC VONDERGOLTZ, M.D.,

NEW YORK.

In view of the menacing epidemic of cholera, I regard it my duty to record my results with lysol in dysenteria and cholera nostras. I used lysol in doses of 3.0 to 10.0 grammes, used in one per cent. strength as clysmata. The astonishing results obtained by this means lead me to ask the profession to combat cholera and its relatives by this method.

The administration of lysol was always combined with that of a stimulant.

As stated in the *American Journal of Obstetrics*, vol. xxv., No. 2, 1892, I have been engaged with the investigation of the antiseptic properties of lysol since October, 1890. By the different experimentators and myself it was found that, relatively, lysol is a harmless drug in comparison to the other powerful antiseptics. I gave the remedy in cases of infectious disease—first in scarlet fever.

The following are the histories of the three most interesting cases:

May 11th I was called to the family of G——. The three children were seized with scarlet fever, presenting nearly the same symptoms. The most alarming symptom was the high temperature, in all cases 103.5° F.; the children also had all the other symptoms relating to the throat, lungs, tongue, eyes, and nose.

The urine of the two elder children showed much albumin and traces of sugar.

The conditions, especially of the eldest child (girl of seven years) and of the babe (fourteen months old), were very critical. The second child, a girl, five years of age, did not seem to be as ill as the others.

I was not misled by my expectations of the internal antiseptic action of lysol. I gave it with sherry wine in the proportion of lysol 5.0 to vin Xeres 10.0. Of this I ordered ten, five, and three drops, for the three children respectively, to be given in milk four times a day.

The effects of these small doses of lysol could be seen within the first twenty-four hours. I saw the children twice a day to May 16th, so I am enabled to give up to that date a complete temperature record.

Analyzing first the curve of M. G——, seven years of age, I have to state that this child got forty drops the first day, with an increasing dose of five drops daily. The temperature fell steadily, without any recurrent exacerbation, till the morning of May 15th, after which no change could be seen.

During the whole time the urine was examined with a double object, viz., to see the effect on the albumin, and note whether phenol could be found. No trace of albumin after the first twenty-four hours could be discovered. The urine showed only one time the presence of sugar, the reason of which phenomenon I could not make out. All the other times the analysis was negative in every respect.

The decrease in the temperature curve can be seen more clearly in the cases of the two other children. The explanation of this fact will probably be that the doses of five and three drops were, in comparison to the age, larger than the ten drops of the older child.

On the second day the temperature of the five-year-old child rose from 98° F. to 99° F. at 6 P.M., which was the result of the neglect of the mother to give the lysol.

On the fourth day the temperature of the baby rose from 98.5° F. to 100.5° F., but this was explained by the fact that the mother gave her some beer.

These two incidents teach two things: 1, that the use of lysol must never be abandoned until the temperature has been normal for a few days; 2, that the diet has to be as restricted as possible, so that no irritation to the uropoetic system may result.

The mixture of lysol, one part, and sherry wine, two parts, could be taken very well in warm milk.

If now, finally, I should formulate a treatment concerning the cholera Asiatica out of these preceding observations, I would advise: 1, To give immediately a stimulant mixed with lysol, 2.5 grammes; 2, to wash out the intestines thoroughly with a one per cent. solution of lysol in warm water. This should be repeated every two hours until a change is seen.

193 SECOND AVENUE.

Progress of Medical Science.

Chronic Heart Disease.—In a paper on this subject in the *Birmingham Medical Review*, Nos. 1 and 2, 1892, Dr. James Little groups the causes of suffering in cases of cardiac disease under the following heads: 1, Overdistention of the cardiac cavities, and particularly of the right auricle and ventricle; 2, inefficient systole in consequence of diminished power or of irregularity in either one or both ventricles; 3, defect in the organs which work along with and help the heart to send the blood through the systemic and pulmonary vessels; 4, disturbances of the innervation of the heart, which may be of cerebral or spinal origin, or may arise from overloading of the stomach, distention of the bowels, or affections of the genito-urinary system; 5, an unhealthy condition of the blood, which may be either imperfectly depurated, as occurs in gout and Bright's disease, or abnormally watery, as in the various forms of anæmia. When over-distention of the cardiac cavities exists, the author advises the abstraction of blood by leeches, the administration of calomel, and restriction of the amount of liquid drunk. When the trouble is due to inefficient ventricular contraction tonics are useful, among which digitalis takes the first place. Dr. Little contrasts strophanthus and digitalis as follows: 1, Digitalis is far the more frequently useful of the two; 2, if a slowing and steadying of the heart has been produced by digitalis, it is often advantageous to keep up its action by an occasional dose of the same remedy; 3, there are some patients whom digitalis sickens, and a smaller number in whom, though the drug does not sicken, it nevertheless fails to bring about an increase in the force of the cardiac contractions, and in such cases we may often produce by strophanthus the effect the older remedy was powerless to accomplish. Patients who have marked thickening of the smaller arteries are sometimes much more benefited by strophanthus than by digitalis; 4, strophanthus is more rapid in its action, but is not suitable for prolonged use. In some cases the effect of this drug is most gratifying, and the author says that he has never seen a failing heart so quickly roused as after the administration of ten minims of tincture of strophanthus and a teaspoonful of brandy in a cup of hot black coffee, repeated twice at intervals of four hours.

Sanitaria for the Care of Consumptives.—Dr. A. Tucker Wise asserts in his monograph on the "Alpine Winter in its Medical Aspects," concerning the advantages of the institution's treatment of phthisis, that, after more than ten years' experience of the treatment of phthisis in the Alps he holds the opinion that "continuous medical supervision of the invalid in a small hotel sanitorium is one

of the best means to be selected for the cure of consumption in its early stages, or the prolongation of life in more advanced phases of the disease, and for training the patient in ulterior self-guardianship."

Treatment of Chloroform Syncope.—The method of treating cases of chloroform syncope resorted to in the clinique of Professor Koenig, of Göttingen, is said to have given very good results. It consists in applying manual compression over the cardiac region some thirty or forty times a minute, the thorax, as a whole, being compressed at regular intervals, by another assistant, in order to facilitate respiration. This compression is said to empty the right ventricle, which in these cases is engorged with blood, and thus to bring about a return of the circulation. Professor Koenig's assistant, Dr. Maas, recommends pressure more frequently repeated, and at much shorter intervals, and by this means he succeeded in reviving two patients who had shown no sign of improvement under the original plan. The operator stands to the left of the patient and presses the thumb deeply at a point midway between the apex beat and the edge of the sternum, repeating the process about one hundred and twenty times a minute. Almost at once the dilated pupils contract, and the presence of an artificial carotid pulse can be felt. After a time spontaneous respiratory efforts are noticed, which are the signal for discontinuing the pressure and the artificial respiration, so long as the contraction of the pupils is maintained and the respiratory efforts do not again cease.—*Medical Press.*

Evacuant Treatment of Cholera.—Dr. George Johnson calls attention again to his castor-oil treatment for cholera. The arguments on which he favors the evacuant treatment and condemns the use of opiates and astringents are certainly plausible. When Koch was carrying out his experiments with the bacillus of cholera he failed to produce the disease in animals by introducing the cholera bacteria into the stomach unless at the same time he injected into the peritoneal cavity a narcotic dose of tincture of opium, his object being "to render it possible for the comma bacillus to remain longer and gain a footing in the intestine." In this manner he induced fatal cholera in thirty out of thirty-five guinea-pigs experimented upon. The administration of opium in cholera would certainly appear to be imitating on the human subject the experiments which Koch and others have performed on guinea-pigs. It is a matter of common experience that the abrupt arrest of diarrhœic discharges is apt to bring about a condition of collapse, and there is no *a priori* reason why this clinical fact should not apply to the diarrhœa of cholera. We know for certain that the opium treatment has invariably and everywhere failed to influence the mortality, and for this reason, if for no other, one would be tempted to try an alternative plan. Even if Dr. Johnson has not succeeded in placing his method of treatment on a sure basis, he has certainly demonstrated the futility and the danger of brutally bottling up the intestines by opiates.—*Hospital Gazette.*

The Treatment of Pneumonia by the Artificial Production of Abscesses.—Prof. Fochier believes that when suppurative processes have taken place in internal organs the disease may be relieved by producing elsewhere artificial abscesses, which may be evacuated surgically. These abscesses he produces by injecting essence of turpentine into the deltoid or hypogastric regions. Dr. Bard contributes the details of a very serious case of pneumonia where such injections had been used with success. His patient, a tailor, aged forty-nine years—a man of good constitution, but of rather alcoholic habits—came into hospital on the tenth day of an acute pneumonia, with consolidation of the upper two-thirds of the right lung. Temperature, 103.6° F.; viscid, amber-colored sputa; weak pulse, atheromatous arteries, and in a state of considerable weakness and danger. A small injection of turpentine was made into the right shoulder; there was some smarting, and two hours later a good deal of pain in both shoulders and arms, with redness and swelling, but the pain soon ceased. The patient went to sleep, and felt much better next morning. The temperature did not sink below 100° F. till the third day after the injection, but after that it did not rise again. The lung cleared up quickly, and no further symptoms showed themselves. On the fourth day after the injection the abscess in the deltoid was opened; it was large and deep, but healed quickly. The patient left hospital quite well. M. Bard believed that the injection had been the starting-point of the successful resolution of the lung. M. Dieulafoy gives an account of the use of the same method in the case of a woman of forty-seven, who had severe pneumonia, following on influenza, with much danger of complete collapse. He gave four injections of fifteen drops of turpentine into the shoulders and thighs, which caused sharp pain for about two hours. In about twenty-four hours improvement commenced, and recovery ensued. The abscesses were opened, and the pus was found sterile. Dr. R. Lépine has employed the same method in one case. Although at the time of the injections the case seemed hopeless, improvement soon took place, and ended in recovery. Fochier believes that the artificial abscesses check the inflammation in the lungs by "fixing" it elsewhere, and calls them "abcès de fixation." Chantemesse and Guigeot prefer the theory that the abscesses do good by causing leucocytosis and bringing up additional leucocytes (phagocytes) to assist those already struggling with the pathogenic organisms in the lungs.—*Dublin Journal of Medical Science*, September, 1892.

Bonuzzi's Treatment of Locomotor Ataxia.—The patient lies upon his back, with a pillow under his head. The doctor then taking hold of the patient's ankles forcibly flexes his legs at the hip-joints as much as possible; the knees are kept extended throughout. Thus the spinal column is strongly bent, and experiments show that the effect on the spinal cord produced by this method is three times as great as the effect produced by suspension. The other advantages of this method are that there is no mechanical apparatus necessary, and the amount of force can be accurately gauged. On the other hand, care must be taken not to flex the legs too strongly, for if too great force be used pain may be caused in the back, and swellings at the back of the thighs, due to intra-muscular hemorrhage.—*Dublin Journal of Medical Science*, September, 1892.

A New Opening for Medical Men.—An English paper of recent date contains the following remarkable advertisement: "*Post-mortems.*—John Briscoe, Esq., M.R.C.S., Carlton Hill, Leeds, has very kindly consented to make post-mortem examinations of animals and birds other than cage birds (which are already undertaken by a very competent gentleman). Subjects intended for examination must, in all cases, be sent direct to Mr. J. Briscoe as soon after death as possible, and accompanied by full particulars as to the date of death, symptoms during illness, treatment, and any other details which are likely to assist the investigator." As the *Hospital Gazette* truly says, the possibilities of this pursuit are immense if properly worked.

The Perils of the Keeley Practice.—An American has recently been released from jail in Mexico where he had been spending the past four months. He had been a sheriff in his native county, but set up in Mexico as a specialist for the cure of whiskey, opium, and other habits. A Mexican opium-eater came to him for treatment, but unfortunately died after receiving a hypodermic injection by the "specialist." The latter was thereupon charged with murder, and his arrest followed. He has now gone home, and will run for sheriff again at the next election, for he thinks it a safer business.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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OUR CHOLERA VISITATIONS.

THE assaults of cholera upon America began in 1832, the original epidemic having started three years before this. The disease attacked New York and spread south and west. New Orleans was in this year affected by both yellow fever and cholera, and the death-rate reached 147.10 per 1,000.

The next epidemic, starting in 1845 in India, reached New York and New Orleans in 1848. The disease was kept out of New York, but it successfully invaded New Orleans and extended up the Mississippi River. Next year (1849) it broke out in New York and was fatal to 5,000 persons.

The third epidemic was brought to New York by emigrants in 1853. It killed 2,000 persons and spread throughout neighboring States. The disease became almost endemic in New Orleans, lasting from 1848 to 1857.

A fourth epidemic started in 1864, and reached this country in 1865. It entered Halifax, New York, and many Southern seaports. The deaths from it in New Orleans in 1866 were 1,294. In the next few years the disease prevailed in many of the Western and Southern States.

The fifth epidemic reached this country in 1873. New York escaped, but New Orleans and some Western cities were less fortunate.

A sixth epidemic started in 1881, reached Western Europe in 1883–84, and tried unsuccessfully to invade the United States.

It will be seen that it takes about three years for the cholera to get from India to the United States. It is brought here by the unwashed classes, and may be carried in the baggage. The years of assault were 1832, 1848, 1853, 1865, 1873, 1884, and 1892. There is no regularity or periodicity in the attacks. If the disease is kept out one year, it may hang about and get in the next.

New York has never had a severe epidemic, and the quarantine officials have kept out the disease three times out of seven. Everything in our past municipal history leads to the opinion that New York can never be severely visited by the cholera.

The city was never in a better condition for resisting the plague. The streets are remarkably clean, the health of the inhabitants is good, and every possible precaution has been taken to stamp out the disease. Even in the few cases that have thus far occurred there have been no secondary ones.

EFFICIENT DISINFECTION.

WE think it quite probable that in time public disinfection will follow very much the course of surgery, and gradually abandon germicidal specifics for simple cleanliness and boiling water. The criticisms which may be made on commonly recommended disinfectants are very well set forth in the *Journal of the American Medical Association*, which says: "A sulphate of iron solution in the strength of $1\frac{1}{2}$ part to 8 of water is advised for the disinfection of cellars, yards, stables, cesspools, sewers, and so on. Accurate bacteriological work has proven beyond doubt that this substance has feeble disinfecting powers at the best, and is altogether valueless in the manner recommended.

"A zinc solution made by dissolving 4 ounces of sulphate of zinc and 2 ounces of salt in 1 gallon of water, is directed to be used for disinfecting clothing, bed linen, and so on. It has never been shown by anyone that this has any disinfecting power whatsoever. In the latter part of the circular it is directed to boil clothing in this solution. While this, of course, is an efficient measure, what advantage is there in this fluid over pure boiling water? It has been shown that boiling soda solution acts more quickly even than pure water, but no such proof has ever been given of the efficacy of the zinc solution.

"Corrosive sublimate solution, 1 to 1,000, is likewise recommended. But the strong germicide properties of this substance are counterbalanced by its tendency to form precipitates with albuminoids and other organic material, and direct experimentation has shown that it is not a reliable agent for the disinfection of discharges."

We have ourselves frequently commented upon the demonstrated inutility of sulphur fumigation. Nevertheless, it is one of the recognized methods of disinfection adopted not only by local, but by national, quarantines. Solutions of bichloride of mercury are also standard disinfectants at national quarantine, and even at New Orleans, where such great claims are made of sanitary perfection.

Heat, lime, soft-soap, and water are the only disinfectants which at present quite escape modern criticism.

A VOICE FROM THE SOUTH.

CHOLERA infected New Orleans in 1832 and killed nearly one-tenth of the inhabitants. It appeared again in 1848 and lasted fifteen years, killing 10,000 people. It came again in 1865, and lasted till 1880, killing over 2,000.

However, the New Orleans sanitarians believe they have learned so much by experience that they can instruct the rest of the country; and we are hearing from the Delta some violent invectives directed against New York's health officials. The *Times-Democrat* publishes a two-column article, by Dr. Joseph Holt, which consists mostly of ravings about New York's politics, lack of scientific knowledge, official lies, and general incompetency. Being pinned down by a request for some practical suggestions for the improvement of New York, Dr. Holt mildly suggests the following:

"The first thing for New York to do, in responding to her obligations, is instantly to dismiss her entire quaran-

tine medical staff. When a quarantine physician, being a State officer, becomes insolent and disobedient, all confidence in him perishes, and he should officially perish with it.

"The next thing for New York to do is to put able and energetic men in those positions, and then go to work and construct a modernized quarantine upon a strictly scientific basis, and enforce it upon rich and poor alike. That discrimination between rich and poor in treatment betrays the pitiable worthlessness of the affair as a scientific institution."

"Doctor, what do you consider the chief essential in a system of sanitary protection?"

"Integrity! When boards of health and quarantine stations cease to be occupied by wire-pullers and mere political accidents, a surprise to themselves and their friends because of the incongruity of their elevation; when these health bodies are a pleasant odor, and not tainted with the doubtful but villainous smell of a secret deal, or other like monetary transactions, and the dead fly ceases to stink in the pot of ointment; when able men, trustworthy and true, occupy these vital stations, without regard to politics or other consideration than peculiar fitness, then confidence becomes the established foundation."

We have sometimes wondered why, if Dr. Holt were such a marvel of sanitary knowledge and integrity, the good people of New Orleans do not keep him at the head of their quarantine system. Is there such a thing as politics in New Orleans?

CHOLERA AND THE SECTION IN PUBLIC HEALTH.

While it is as difficult to advance original ideas concerning cholera as to suggest a novel theory in regard to Hamlet's character and peculiar frame of mind, it may prove profitable to present anew ideas already existent, that apprehension may be transformed to easy security through greater knowledge and more intelligent precaution. Such evidently was the aim of the New York Academy Section in Public Health, which held a meeting of peculiar interest, September 19, 1892. Suggestions, varied as the temperament of the speakers, and all sound in the main, were listened to by a numerous and intelligent audience, who had come to mark, learn, and inwardly digest whatever experience could give in the way of advice. One physician advocated a permanent national quarantine, to be given into the hands of the Marine Hospital Service, who already do part of the work. Another suggested that every ship's company should have a clean boat in port during an epidemic of cholera, to which persons from an infected vessel could be at once transferred on arriving. Every well person, every sick passenger, the dying and the dead, should be removed promptly from infected steamers. The question of cholera hospitals was answered in the negative, on account of danger in moving the patient. The pauper on a pallet of straw, it was said, stands a better chance of recovery in squalor, if he only has an attendant to give him plenty of cold water to drink and put hot bricks around him as occasion requires, than if transported to the most luxurious hospital after the disease is definitely developed. Disinfection of excreta, and prompt attention to the early diarrhœa among persons otherwise free from suspicious symptoms, has stamped out an epidemic in four days, and may reasonably be expected to do so again. The cleanliness that is next to godliness, as far as cholera is concerned, consists in a perfectly clean and much white-washed cellar, wood-work washed with proper disinfectants, ideal plumbing, the steaming of carpets, hangings, and upholstery, the ripping apart and steaming of hair mattresses and pillows, free ventilation and plenty of sunshine. The best disinfectants are carbolic acid, chloride of lime, corrosive sublimate, and sulphur. Air and sunshine have power to render the cholera germ innocuous in time, while sufficient heat destroys it always. The army and navy surgeons appeared to think but little of cholera in any of its aspects; for, as one of them said, familiarity with its management had necessarily bred contempt for its dangers.

CHOLERA INOCULATIONS.

Now that the daily newspapers have taken up the subject of cholera inoculations and are sending correspondents to test their preventive efficacy *in corpore vilo*, it is well to recall the fact that Ferrán practised them in the south of Spain some seven years ago. The first experiment was made on February 23, 1885, Dr. Sereñana, an assistant of Ferrán, having been inoculated in each arm on that date. Three hours after the injection he had a severe pain in the posterior part of each arm, and at the end of seven hours had a slight chill with some elevation of temperature and a rapid pulse, and complained of a moderate headache. At the end of twenty-four hours all these symptoms had passed away. Another inoculation, nine days after the first, was followed by negative results. In the epidemic which occurred the following summer, Dr. Ferrán and his assistants made a very large number of inoculations, and the claim was made, and supported by elaborate statistics, that the inoculations were really preventive, the morbidity and mortality among the vaccinated being markedly less than in the unprotected. The author of the method met very naturally with much opposition, both at home and abroad, and he seems to have been unable or unwilling to contend against it, for since the publication of his statistics, at the close of the epidemic of that year, nothing more has been heard of his inoculations, and even the Spanish papers make no claims for priority on his behalf.

Duration of Treatment in Syphilis.—Dr. Heilmann has noted the time required, under different methods of treatment, for the disappearance of the first symptoms in syphilis. He compared treatment by calomel injections, mercurial frictions, and mercury by the stomach, in 843 cases of recent syphilis without complications and without previous treatment, and found the mean duration of treatment was 49.8 days. The smallest mean duration was 41.4, furnished by subjects ranging from sixteen to twenty years of age. For those between twenty-one and thirty years the average duration was 47.5 days. Women required a longer treatment than men. The average of treatment by calomel injections was 46.6, by mercurial inunctions 51.1, and by mercury internally 56.6.

News of the Week.

Cholera up to Date.—At the time of writing it is twenty-one days since the first cholera ship, the Moravia, arrived in this port. Among the ships there have been 163 cases and 98 deaths, only 22 of which occurred in this port. Besides this there have been eight cases and six deaths in the city limits.

The Jews and Cholera.—The Hebrew race is periodically reported to be exempt from the serious ills of humanity ranging from gonorrhœa to cancer. It is now asserted that the Russian Jews have been "miraculously" spared in the epidemics of cholera in Russia and at Hamburg. Unfortunately, the official statistics do not in the least bear this out.

The Mortality from the Cholera in New York, in 1832, was 3,200; in 1849, 5,000; in 1853, 2,000. The mortality from cholera in New Orleans, from 1832 to 1880, was 17,187 (Jones). The mortality-rate is given usually as not under one-third or over one-half. In Berlin the mortality-rate was 65.8 per cent., or 18,916 deaths in 28,753 cases, from 1832 to 1873 (Eichhorst). In New Orleans the mortality-rate, from 1842 to 1880, in Charity Hospital, was 67.3 per cent. (Jones).

The cholera mortality, therefore, seems to be in fact over fifty per cent. as a rule. The aged, the debilitated, and the intemperate are most liable to succumb.

Curious Prescriptions for the Cholera.—In 1832 an ingenious American physician proposed to check the diarrhœa by plugging the anus with a soft velvet cork. An English physician, even more ingenious, proposed to keep the blood circulating by putting the patient on his back on a board, and see-sawing him up and down at the rate of eighty to one hundred times a minute. Another physician advised bleeding, turpentine, and cool drinks; still another thinks the disease one of the spinal cord and sympathetic, and plasters the back with ice-bags.

Treatment of Cholera.—The famous elixir of Voronej, widely used in Russia, is composed of the following ingredients:

℞. Ammon. muriat. ..... ʒ x.
Olei naphthæ. ..... ʒ vj.
Olei caryophilli. ..... ʒ x.
Acid nitric. ..... ʒ vj.
Potas. nitrat.,
Turkey pepper. ..... āā ʒ jss.
Menth. virid. ..... ʒ viij.
Aceti. ..... Oj.
Spirit. vini gallic. ..... Oiv.
M.

A Corpse in a Medical College.—A prominent lawyer of this city relates the following somewhat extraordinary story. He says: "I had a most extraordinary relation with General Harrison a good many years ago. I don't suppose a case of that kind ever happened before, or ever will happen again, affecting a family of such distinction and involving two Presidents of the United States. We have in Cincinnati medical colleges which utilize dead bodies for subjects for the use of medical classes. At North Bend or Cleves had died a young woman, and soon after her decease it was found that her grave had been rifled of her remains. Making further search, it was found that the body of Benjamin Harrison's father was also missing. President Harrison's brother came down to Cincinnati, suspecting that these bodies had been sold to the medical college, and he got authority to examine the places of deposit of fresh subjects. At one of these colleges they had certain bodies put in a well, and there pickled, you may say, so as to have them in a state of preservation for the dissecting-table. The president of the college was a well-meaning man, and he had not the least suspicion that anything would be found in the possession of his institution reflecting upon an historical and respectable family. But when they ran down a hook to bring up the successive corpses, the very first one that came up was venerable Mr. Harrison, father of Benjamin Harrison, our President, and son of William Henry Harrison, also our President. It was certainly a dreadful sight for a son to see his father appear suddenly in that state. General Harrison came down from Indianapolis to Cincinnati. I believe that he would have killed the president of that institution, if he could have found him at that time. He was inflamed, as he well might be, at the indignity visited upon his beloved parent, one of the most inoffensive men in all that country, and a man of fair distinction too, who had been offered the Lieutenant-Governorship of Ohio, and sent to Congress. He turned about and came to our firm, and employed me and my partner to prosecute the college. Nothing could be done, however. In all respects of outrage it would look as if a crime had been committed, but in point of fact, nobody but the obscure perpetrator of the grave-robbing could be prosecuted. The body was returned to the tomb, and the family were left to let time heal their wounded feelings."

An Army Medical Board will be in session in New York City during October, 1892, for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies. Persons desiring to present themselves for examination by the board will make application to the Secretary of War before October 1, 1892, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from whence they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character, and moral habits. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a regular medical college, as evidence of which his diploma must be submitted to the board. Further information regarding the examinations may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

The Epidemic at Hamburg: Its Explanation.—Hamburg, which had been poisoned by immigrants and sailors from Russian ports, had unhappily presented filth conditions not inferior to those which had invited the devastations recently of Russia, and of late years of Naples, Sicily, Spain, Marseilles, Toulon, and the mild outbreaks of Paris, all epidemics spread by filth in water and soil, of which Mr. Ernest Hart stated he could give, if time allowed, exact authentic and fully admitted details.

Most of those cities had learned the lesson and taken it to heart more or less completely; to the extent to which they had done so they would have relative immunity in the future. Hamburg had not; the Elbe was filthily polluted, and it furnished the drinking-water of the city, very ill-filtered or unfiltered. The drinking of the water, except after boiling, had now been strictly forbidden, and the river baths were closed. According to the extent to which these edicts were rigidly enforced and carried out, the present epidemic would be limited and rapidly decline. This would do more than the "sprinklings" with tons of disinfecting powder and "vague libations" of thousands of gallons of antiseptic fluid, of which much had been heard during the last few days. Hamburg had sinned against natural laws, and was unhappily paying the penalty in suffering: "The soul that sinneth it shall die."—Ernest Hart.

The English View of It.—Quarantine may be defined as an elaborate system of leakiness; impossible if it be complete, because implying isolation and arrest of intercourse; useless and dangerous if incomplete, because inviting a false reliance and offering a false security. Medical inspection, with the powers of detention, was a more real precaution and more easily made effective; but under the circumstances it was only a sieve, which would strain off the coarser majority of cases, but through whose many apertures the more subtle were already passing, and would pass.

The Second International Congress of Physiologists.—The Second Triennial International Congress of Physiologists has this year held its sittings at Liège, with Professor Holmgren (Upsala) as President, in the Physiological Institute of the University. The Congress terminated on Thursday, September 1st, after a banquet at which the Burgomaster of the city was present. More than one hundred European physiologists attended the Congress; of these, twenty-four represented Great Britain and Ireland, the number of British members being larger than at the Congress at Basle four years ago. Professor Michael Foster and Professor Burdon-Sanderson were present. The following communications were read by the British members and illustrated for the most part by experimental demonstrations: On the first day: "Nucleo-albumins," by Professor Halliburton, of London; "The Fate of Peptone in Blood and Lymph," by Dr. Starling, of London; "The Action of Antagonistic Muscles under Reflex and Cortical Excitation" (demonstration), by Professor Sherrington, of London. On the second day: "Some Further Experiments on the Frontal Lobes," by Professor Schäfer, of London; "Crystalline Globulin from Urine" (demonstration), by Dr. Noel Paton, of Edinburgh; "Varieties of Leucocytes" (with demonstration), by Professor Sherrington; "Structure of Striated Muscle" (with demonstration), by Professor Schäfer; "Cortical Centres for Movements of the Anus and Vagina" (demonstration), by Professor Sherrington. On the third day: "Temperature and Excitability" (with demonstration), by Professor Gotch, of Liverpool; "The Depressor Nerve," by Dr. Bayliss, of London; "The Capillary Electrometer and Observations on Muscular Contraction," by Professor Burdon-Sanderson and Mr. Burch (Oxford); "Myothermal Observations upon Man" (with demonstration), by Dr. Waller, of London. It was agreed to hold the next Congress in 1895, at Berne, in the Physiological Institute of the University, under Professor Hugo Kronecker. The general secretaries chosen for the next Congress are: For the French language, Professor Arloing; for the German language, Professor Exner; for the English language, Professor Sherrington.

Measures of Precaution Adopted in Nursing Cholera Patients.—The precautions in cholera nursing are essentially the same as for nursing typhoid fever, only more rigid and severe, as the disease is more virulent. The following rules were enforced and disinfectants employed at the London Hospital at the time that Mrs. Gladstone nobly gave her services, and the sisters of All Saints, Margaret Street, aided the hospital so successfully: The first two or three days Condy's fluid diluted, and chloride of lime; subsequently carbolic disinfecting powder and carbolic acid largely diluted (1 to 40), mixed with sawdust in quantities sufficient to wet the sawdust and sprinkle about the passages, wards, closets, etc. None of the excreta from patients was allowed to be emptied into the sewers; instead of this a portion of dilute carbolic acid fluid—about half a pint—was put into each chamber-pail, and buried in the garden. The pails had water-tight lids. Burnett's fluid was sprinkled in the cabs that brought the patients. The straw from the beds was burnt in each case of death, or where much soiled by excreta. The linen from the cholera wards was washed separately in the laundry of the hospital with McDougall's disinfecting soap. Hot coffee, beef-tea, etc., were recommended to be taken by the nurses at early dawn, and every one was advised to avoid going on duty with an empty stomach, or in a depressed condition. An extra allowance of wine and pay was made to the nurses.—*British Medical Journal.*

A Code of Effective Cholera Precautions for Doctors and Nurses Observed in 1885.—Although cholera raged so severely in Chili in 1886–87, the doctors and nurses in a number of small hospitals in different localities of the town were enabled entirely to protect themselves. Each of the hospitals contained from fifty to sixty beds, and had a staff of six doctors, six students, and thirty attendants. All wore long aprons, reaching from the chin to the feet, and caps. For washing the hands and face a solution of corrosive sublimate (mercuric chloride, 1 to 1,000) was exclusively used. In the dining-room all dishes before being used were strongly heated by the flame of burning alcohol. The bread was sterilized by toasting. It is stated that no one of the staff sickened who adhered rigidly to these precautions. The convalescents before their discharge were bathed in the corrosive sublimate solution, and their clothing was washed in a similar disinfecting solution. The floors of the hospitals were made of a kind of pine parquet soaked in tar, and were washed daily with a solution either of copper sulphate or potassic permanganate, 1 to 1,000. On emptying a ward it was fumigated according to rule by sulphurous acid gas for twenty-four hours.—*British Medical Journal.*

Preventive and Curative Drinks and Medicines.—Put not your trust in nostrums; cholera does not "come by Providence and go by medicine," although that is a common and ignorant belief in respect to it and many other

diseases. A tried and safe preventive of the tendency to diarrhœa (which should always be checked) is sulphuric acid lemonade, made by acidulating boiled and sweetened water to taste with dilute sulphuric acid (or, as at the Post Office, Dr. Waller Lewis's very palatable sulphuric orangeade). The citric acid lemonade lately vaunted was rather inferior in value to this. The cholera bacillus, as we now know, was favored by an alkaline fluid, and did not live in acid media. An excellent and well-tried preventive of the prevalent slight diarrhœa was the Vienna mixture (used in barrels formerly in hospital practice). It consisted essentially of 15 drops of dilute sulphuric acid to 6 ounces of boiled and sweetened water, to which might be added, under medical advice, 10 drops of sulphuric ether and 5 drops of laudanum for an adult. On ice-bags, camphor solutions, and other expedients of the kind no reliance could be placed, except in skilled hands and for selected cases. Many people poisoned themselves with camphor during a late epidemic, as a precaution against cholera. Once established, and in well-marked cases of Asiatic cholera, drugs would do little to cure. The mortality of cholera all over the world and in all epidemics had defied drugs—just as severe arsenical poisoning would do—and varied according to intensity and the age and condition of the patient from forty-five to sixty-four per cent. It was eminently a case in which prevention was far more efficacious than cure.—Ernest Hart.

Sir Joseph Lister, having attained the age of sixty-five, has been retired from the Chair of Surgery, at King's College Hospital.

Dr. Hobart A. Hare, of Philadelphia, has undertaken a research into the action of chloroform, on behalf of H. H. the Nizam of Hyderabad's Government.

The Cholera Abroad.—If the official reports from Europe are to be believed, the epidemic of cholera in the Russian cities and Hamburg is beginning to subside. Most of the cases in the latter city are from the districts of Horn, Hamm, Barmbeck, and Hammerbrook, where there is to be found the larger part of the tenement-house population. The people there are miserably poor and half starved, and they persistently defy the attempts of the authorities to improve the sanitary condition of their dwellings and surroundings. Refugees are beginning to return to their homes, and there is an evident revival of business in the city. The London correspondent of the *Sun* telegraphs extracts of a letter from Dr. Louis L. Seaman, formerly chief of staff at Blackwell's Island, in which it is stated that the cholera epidemic in Paris is second only to that of Hamburg in its severity, and that the authorities have persistently concealed the facts. There are, he asserts, from eighty to one hundred cases admitted to hospital every day, and the mortality is, as elsewhere, about fifty per cent. Dr. Seaman says that these facts regarding the cholera epidemic have been misrepresented by the press, which is either subsidized or muzzled in the interests of the shopkeepers, whose rich harvests are now being gathered from returning continental travellers.

The Riberi Prize.—The Royal Academy of Medicine of Rome, has announced a prize of $4,000 for the greatest discovery in anatomy, physiology, pathology, or pharmacology during the period from 1892–96. The essay descriptive of the discovery must be written in Italian, French, or Latin, and must be handed in not later than December 31, 1896.

The Congress of German Naturalists and Physicians, which was to have been held this year at Nürnberg, during the week beginning September 12th, has been postponed to next year by reason of the cholera.

Dr. Otto v. Steinau-Steinrück died recently at the age of seventy-three. He was formerly one of the leading physicians of Berlin, but had retired from practice several years ago.

The German Public Health Society.—It has been decided to omit the annual meeting of this society, which was to have been held in Würtzburg this month. The reason given is that most of those who were to have participated in the proceedings are busy fighting cholera, and have no time for talking.

Dr. John F. Dunker died at his home in Newark, N. J., on September 15th, at the age of eighty-three. He was a native of Denmark, and began practice in Newark forty years ago.

The Medical Advisory Committee of the New York Academy of Medicine, consisting of Drs. Stephen Smith, A. Jacobi, D. G. Janeway, T. M. Prudden, R. H. Derby, H. Biggs, and Allan McLane Hamilton, has submitted its report to the Special Committee on Quarantine of the Chamber of Commerce. The report deals with the necessity of disinfecting merchandise and baggage carried in infected ships, of transferring infected passengers from the ship without delay and isolating them in small groups, of thoroughly disinfecting ships and contents with live steam, of denying entry to edibles from infected ports, and maintaining quarantine but five days after the development of the last case. In a general way it indorses the quarantine system and believes that it is possible by proper methods of disinfection to stamp out cholera on an infected ship, when quarantine is impossible, without removing the passengers.

Disinfection of Diarrhœal Discharges.—To Physicians, Nurses, etc.: At a meeting of the Board of Health of the Health Department of the City of New York, held on the 16th inst., the following preamble and resolution were adopted:

Whereas, The presence of cholera in this city and its relation to diarrhœal diseases makes it extremely important that all diarrhœal discharges be at once disinfected, as many cases of cholera take the form of mild diarrhœa, but the discharges in those cases are as dangerous as from the severer types of the disease; therefore

Resolved, That physicians and nurses are respectfully requested to see that this recommendation is promptly carried out, as in this way the great danger of spreading infection from unsuspected cases of cholera will be greatly lessened.

By order of the Board of Health. Charles G. Wilson, *President*. Emmons Clark, *Secretary*.

Reception to the American Gynecological Society.—Dr. and Mrs. John Byrne, of Brooklyn, gave a notable and largely attended reception at their residence, 314 Clinton Street, to the American Gynecological Society, on Tuesday evening, September 20th.

Pecuniary Aid to the Health Board.—A requisition by the Board of Health of New York for an appropriation of $17,500 was honored by the Board of Estimate and Apportionment yesterday. This additional sum is rendered necessary by the extra precautions which have been considered advisable in the provision for the possible outbreak of cholera. Ten thousand dollars is to be expended for temporary hospitals and ambulances, $5,000 for disinfectants, and $2,500 for twenty-five additional sanitary inspectors to be employed for a month. Relief was also granted to the Street Cleaning Department by the passage of a resolution allowing Commissioner Brennan to employ 100 additional men to flush the streets and to trim scows.

Dr. and Mrs. Lewis A. Sayre entertained the American Orthopædic Association at a reception given at their Fifth Avenue mansion, on Tuesday evening, September 20th. A large number of representative medical men and other friends from this and other cities honored the hosts and their guests by their presence.

The Cholera Scare in New York has fortunately abated. The newspapers are necessarily quiet. Scare head-lines cease to appear, no new cases have occurred, the quarantined passengers are properly housed, the Health Board has proved its efficiency, the health officer is no longer blamed, and public confidence is again restored.

Reviews and Notices of Books.

HOSPITALS AND ASYLUMS OF THE WORLD: Their Origin, History, Construction, Administration, Management, and Legislation; with Plans of the Chief Medical Institutions, accurately Drawn to a Uniform Scale, in Addition to those of all the Hospitals of London in the Jubilee Year of Queen Victoria's Reign. By HENRY C. BURDETT, Formerly Secretary and General Superintendent of the Queen's Hospital, Birmingham; the "Dreadnaught" Seamen's Hospital, Greenwich; Registrar of the Medical School; Founder of the Home Hospitals Association for Paying Patients, the Hospitals Association, and the Royal Nursing Pension Fund for Nurses; Author of "Pay Hospitals of the World," "Hospitals and the State," "Cottage Hospitals: General. Fever, and Convalescent, with Fifty Beds and Under," "The Relative Mortality of Large and Small Hospitals," "Helps to Health," "Burdett's Hospital Annual and Year-book of Philanthropy," and Editor of *The Hospital*. In Four Volumes and Portfolio. Volume I. ASYLUMS—HISTORY AND ADMINISTRATION. Volume II. ASYLUM CONSTRUCTION, PLANS, AND BIBLIOGRAPHY. London: J. & A. Churchill. 1891.

IT is difficult in a brief notice to do justice to a work of this magnitude and excellence, and we can only attempt to give an idea of the character of the work and of the thoroughness with which the task has been carried out by the accomplished author. It is hardly necessary to refer to the great value of such a work from an historical point of view, or as a book of reference for all those interested in hospital construction and management. This is an age of scientific hospital construction, and no one at the present day should have a hand in the erection of a building for the housing of the sick or of the insane, who is not only well up in all the principles of ventilation and warming, but also thoroughly conversant with the history of the subject, and in position to profit by the errors as well as the successes of his predecessors.

In the first volume Mr. Burdett gives a historical review of the management of the insane from the earliest times down to the present, and then treats of the present condition of lunatic asylums in different countries of the civilized world, of lunacy laws now in force in these countries, and of asylum nursing and training of attendants for the insane. The second volume deals with asylum construction, furnishing, and appointments, and also contains a number of plans of existing and proposed institutions for the care of the insane and feeble-minded. Not the least valuable feature of this volume is a very complete bibliography of all works descriptive of asylums and of their management. Each volume is furnished with a very satisfactory index. In addition to the plans above mentioned, there are numerous illustrations of furniture and appliances specially adapted to asylum use. The volumes are excellently printed in clear type on heavy paper, and are bound neatly and durably.

The author has done an excellent service to the profession and philanthropists in general, in presenting them with a work of such undoubted utility. We can only add, in concluding this brief notice, that it is a matter of congratulation that so necessary a work has been undertaken by one so thoroughly competent, by long and practical experience, to perform the task satisfactorily as Mr. Burdett.

HOW TO FEEL THE PULSE AND WHAT TO FEEL IN IT. Practical Hints for Beginners. By WILLIAM EWART, M.B. Cantab., F.R.C.P., Physician to St. George's Hospital; Clinical Lecturer and Teacher of Practical Medicine in the Medical School; Physician to the Belgrave Hospital for Children; Additional Examiner in 1891 for the Third M. B. of the University of Cambridge; late Assistant Physician and Pathologist to the Brompton Hospital for Consumption and Diseases of the Chest. With Twelve Illustrations. New York: William Wood & Co. 1892.

IT is a fact that goes without saying that the pulse does not receive half the attention from physicians that its importance indicates. It is a valuable aid in diagnosis and prognosis as well as a meter of the strength of the patient. To obtain these ends, however, it must be thoroughly studied, and its study is quite a considerable bit of science. Dr. Ewart's book fills all the requisites. It is clear, concise, and contains a wonderful lot of knowledge between its covers. Once mastered, the physician will have in the pulse an incalculable aid. The subject is clearly illustrated.

A SYSTEM OF THERAPEUTICS. Edited by HOBART ARMORY HARE, M.D., Professor of Therapeutics and Materia Medica, in the Jefferson Medical College of Philadelphia, assisted by WALTER CHRYSTIE, M.D., formerly Instructor in Physical Diagnosis in the University of Pennsylvania. Vol. III. Diseases of Skin, Nervous System, Genito-urinary Apparatus, Eye and Ear. With Illustrations. Philadelphia: Lea Brothers & Co. 1892.

THIS is the last volume of Dr. Hare's admirable work on therapeutics, reviews of the first two volumes of which have already appeared in the MEDICAL RECORD. The work is one of monumental size, but every detail of it is excellent and it entrenches the Anglo Saxon race in the first rank of therapeutists. Each article is written by an authority on the subject. The original method of taking up a disease and giving the treatment of it to the exclusion of etiology, symptoms, etc., except so far as is necessary, is adhered to. The book is one that should be in every library. Diseases of the skin are treated by H. Radcliffe Croker, W. A. Hardaway, James Nevins Hyde, and Milton B. Hartzell. Diseases of the nervous system receive three hundred and eighty-four pages, and are in the hands of Edward N. Brush, H. M. Bannister, B. Sachs, J. Chalmers DaCosta, M. Allen Starr, Charles K. Mills, Landon Carter Gray, Wharton Sinkler, C. Eugene Riggs, Joseph Ransohoff, T. D. Crothers, and F. X. Dercum. Diseases of the Genito-urinary Apparatus have three hundred pages from the pens of Andrew H. Smith, J. Will-

iam White, Edward Martin, T. J. Watkins, R. L. Dickinson, Hunter Robb, Howard A. Kelly, and Barton Cooke Hirst. Diseases of the eye are allotted over three hundred pages, and the authors of the several monographs are W. F. Mittendorf, George E. de Schweinitz, Charles J. Kipp, S. C. Ayres, Swan M. Burnett, Henry Gradle, Lucien Howe, Edward Jackson, and F. Bueller. Diseases of the ear likewise receive extended attention, the several authors being B. Alexander Randall, Robert Barclay, Samuel Sexton, and Charles H. Burnett.

Du Traitement par l'Électrolyse des Déviations et Éperons de la Cloison du Nez. Par J. Bergonié et E. J. Moure. Paris: O. Doin; et Bordeaux: Feret et Fils. 1892.

In this monograph the causes, symptoms, etc., of spurs and deviations of the nasal septum are briefly given, and full directions given as to the application of electrolysis for their removal. This mode of treatment has received a more cordial welcome among the French rhinologists than among those of any other nationality. In this monograph, clinical histories with illustrations are given to prove the logic of the ground taken. The results obtained by electrolysis have been surprisingly good. In this country, the saw and trephine are mostly used for spurs of the septum, while for deviations several different operations have been proposed. The ultimate result of the latter is often very unsatisfactory. We believe that the next ten years will see electrolysis more frequently practised by American specialists in this branch.

Une Mission en Espagne: L'Hygiène et l'Assistance Publiques. By Dr. C. Delvaille; avec une Préface de M. le Professeur Brouardel, Doyen de la Faculté de Médecine de Paris. Paris. 1892.

This is a general description of the methods of public hygiene in its broadest sense, as existing in Spain at the present time. A full description is given of the laboratories employed in the work, laws in regard to disinfection, public baths, hospitals, dispensaries, etc. It will doubtless surprise many to learn that sanitary science has reached such healthful proportions in a country we are so apt to regard as way behind the times in such matters.

What to Do in Case of Accident. By B. Merrill Ricketts, Ph.B., M.D., International Medical Congress, Washington, D. C., 1887, American Medical Association, Ohio State Medical Society, Fellow of the New York State Medical Association, Mississippi Valley Medical Association, National Association of Railway Surgeons, Cincinnati Academy of Medicine, Cincinnati Medical Society, Southwestern Ohio Medical Society, Cincinnati Natural History Society; Visiting Dermatologist German Protestant Hospital; Physician for Skin Diseases and Plastic Surgery to Christ's Hospital, and Consulting Physician for Skin Diseases to Ohio State Hospital and Woman's Medical College; Chief Surgeon for C. P. and V. R. R., and A. E. and L. Ins. Co. Cincinnati: Printed by James Barclay. 1892.

We have reproduced the whole of the title-page of this treatise as a warning to others who may be tempted to do likewise. The aim of the book is apparently to instruct the layman concerning the course which he ought to pursue when so unfortunate as to meet with an accident, or to be a witness of such mishap to others. The instruction is imparted in the form of maxims, short, sharp, and to the point, as will be seen from a specimen here quoted. The section is headed "Fire," and reads as follows: "1. Locate fire-escapes. 2. Keep still if clothing takes fire. 3. Lay down upon the floor at once. 4. Cover with a coat, shawl, rug, carpet, blanket, or anything at hand. 5. If unprovided, take a full breath and stoop low and crawl along the floor. 6. Jump in the water (ocean, river, lake, pond, tub, etc.). 7. Roll in the snow or mud. 8. Control panic of others. 9. Keep presence of mind. 10. Before passing through fire or smoke, wet a pillow-case, cut an eye-hole, and put it over the head." Much other valuable and interesting information, not strictly medical in its nature, is to be found within the covers of this small work. Thus we read on page 55, that "it is a fraud to conceal a fraud;" on the following page that "America was discovered in 1492;" on page 57 that "a firkin of butter weighs fifty-six pounds," and on page 58 that "whale is said to live 1,000; elephant, 400; swan, 300." Time, space, and the copyright law forbid us to quote further from this instructive work.

The Extra Pharmacopœia. By William Martindale, F.C.S., late Examiner of the Pharmaceutical Society, and late Teacher of Pharmacy and Demonstrator of Materia Medica at University College. Medical References and a Therapeutic Index of Diseases and Symptoms, by W. Wynn Westcott, M.B. Lond., Deputy Coroner for Central Middlesex. Seventh Edition. London: H. K. Lewis. 1892.

Nothing brings more clearly to mind the manifold changes, we do not say advances, in the materia medica than the successive editions, appearing at short intervals, of works of this kind. It is only two years since the sixth edition of this excellent little work was published, yet the additions to the present one have required nearly three hundred new entries in the index. The general arrangement of the material employed is the same as that of previous editions, and, as we have said before, we repeat now, that we know of no more handy and satisfactory little work of reference on therapeutics and materia medica than this. Those who use it in this country must, of course, remember that the preparations and doses are those of the British Pharmacopœia.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PUBLIC HEALTH.

Stated Meeting, September 19, 1892.

H. D. Chapin, M.D., Chairman.

The Present Status of Quarantine Laws and their Administration.—Dr. S. T. Armstrong read the first paper of a series relating to quarantine and cholera.

Quarantine, he said, might be defined as a period of variable length, during which persons coming from localities where epidemic diseases existed were detained for purposes of observation. Inferentially, it included a properly equipped establishment for the reception of the well, hospital for the ill, place for disinfection, a corps of trained nurses, etc.

Among the diseases from which our maritime quarantine was intended to protect us were yellow fever, typhus or ship fever, cholera, small-pox, scarlet fever, measles, diphtheria, and leprosy. The author thought it was superfluous to make any argument regarding the desirability of quarantine. He especially impressed the advantages of national quarantine, free from political influence, which implied permanence of office and extensive experience. That Congress had power to legislate was shown by a decision of the Supreme Court. Meantime we should not underrate the value of State and local quarantine when conscientiously carried out. Congress should enact laws necessary to supplement and complete the authority which it had already vested in the Marine Hospital Service.

How Long Shall a Cholera-infected Vessel be Detained at Quarantine?—Dr. Alfred S. Carroll read a brief paper on this subject. The question could be answered in three words: A few hours. Reasons for this statement were that it had long been known that the cause of

cholera lay in the discharges of infected patients. As a rule, only the uncleanly, or those confined in steerage quarters on vessels, were likely to get the disease. Rarely did cabin passengers need detention. It had not been shown that cholera had ever been transported by merchandise. The danger was only from articles contaminated by the cholera discharges. There was evidence that the discharges were virtually harmless while fresh. Dr. Carroll said that with such doctrine before us the problem of dealing with ships could be reduced to very simple terms. Cholera could be, and had been, stamped out on shipboard in a very short time. When Vanderpoel was health officer a case of cholera occurred in a first-cabin passenger, yet the vessel was detained only twenty-four hours. The dejecta were cared for, the clothing treated, etc., and no further cases developed. But certain rules should be observed: All passengers should be instantly removed from the vessel; the sick should be separated from the well; the latter need be kept under observation only until after the period of incubation had passed. To keep the well and suspected on board was contrary to the dictates of humanity and common sense, and tended to render futile the very purpose of quarantine. In a very short time the vessel's bilge could be washed out, and parts exposed to cholera thoroughly disinfected. Thoroughness did not imply slowness. To avoid a senseless panic it should be known to a certainty whether one had to deal with real Asiatic cholera, and this could now, or in the past, be determined by the clinical history and post-mortem appearances, without waiting several days for a bacteriological examination.

Dr. G. M. Sternberg then read a paper on "The Biological Characters of the Cholera Spirillum, and Disinfection in Cholera," which will appear in a future issue of the Medical Record.

Sulphur Dioxide as a Disinfectant.—Dr. J. H. Raymond weighed the evidence bearing on the value of this agent as a disinfectant, especially in cholera. It had been used as a disinfectant for three thousand years. But since bacteriological research had come to take so prominent a place, the questions of disinfection, antisepsis, and deodorization had been studied more scientifically and their dividing lines drawn more exactly. The same disinfectant was not equally efficacious in killing the different varieties of germs.

Sulphur dioxide would destroy spirilla, while it proved a failure as a disinfectant for bacilli in that it would not destroy the spores. Koch had asserted that the spirillum of cholera was without spores, and although this was now being doubted by some, yet actual test showed that the sulphur dioxide, employed in the manner recommended by the American Public Health Association, was an efficient disinfectant against cholera germs carried in rags, etc. The author cited the experiments of Dr. H. M. Biggs, and concluded with saying that sulphur fumigation, while not replacing bichloride, carbolic acid, lime, could be used in conjunction with them, and where steam was inapplicable should be employed because of its power of diffusion.

Local Measures of Prevention and Relief in New York City.—Dr. Stephen Smith read a paper with this title. It was based on his experience in the epidemics of 1849, 1854, and 1866.

Diarrhœa was a premonitory stage of cholera; it was painless, and rarely excited apprehension; it was very curable, not far from ninety-nine per cent. of the cases recovering if properly treated; further, cholera attacked the more insalubrious places, and these by degrees. On these facts he would base the prevention or management of an epidemic as they did in 1866, when it spread from isolated cases in the city, and was prevented in about every instance. The city was divided, by aid of the dispensaries and the Board of Health, into districts, so that physicians visited the homes of the working people, treated all cases of diarrhœa, and reported any case of cholera, which was at once guarded, the inmates of the house kept under strict surveillance for commencing diarrhœa. Disinfection was employed, etc. A similar plan might be adopted to-day. He had observed that to transport patients with well-marked cholera to a hospital, especially any distance, was extremely fatal. They could be safely quarantined in their homes. Separate wards could be used in general hospitals without danger, under proper care, and he regarded this as better than extemporizing hospitals or transferring patients to islands.

The Practitioner and Cholera; Suggestions.—Dr. A. Jacobi thought the most important suggestion which he could make was that the subject had been fully treated of, that the hour was late, and he had better say nothing.

Being urged, he said he would repeat a suggestion he had given to the newspaper reporters, viz., that they say as little as possible of the cases of cholera in town, and print and reprint from day to day in boldest type the circular of the Board of Health. He suggested to practitioners that they also read that circular and see that their patients lived up to it.

It was all very well to read that what water they drank should be boiled; but the doctor should tell his patients to keep it in an aseptic vessel, and that only such water should be used in washing hands and face and mouth. The people should wash their hands, face, and mouth before and after each meal. Physicians should see that the families under their care were not taking some advertised quack medicine which, in their opinion, relieved them of every precaution. They ought to see that diarrhœa and other troubles did not go unheeded as due to dentition. What isolation could do to prevent the spread of cholera had been shown in this city, and the speaker gave great credit to Dr. Bryant in this matter through his connection with the Department of Health. He also expressed praise for the efficiency of the Governor, and said that at the next election he would vote for him, notwithstanding Tammany. Encomium was further due the public-spirited citizens, those who were least likely to contract cholera, yet who, in the face of a threatened epidemic, had in two days raised two hundred thousand dollars to ward it off. It was a duty of the physicians of the city to inspire these noble men with the necessity for like generosity in stamping out diphtheria and other diseases, which took off more people than cholera was likely ever to do. The speaker alluded in this connection to the necessity for more Willard Parker hospitals.

Dr. Janeway sent a note, and said that disinfection of the discharges and sanitary suggestions already made impressed him as very important.

The Chairman, Dr. Chapin, thought the steamship companies were negligent in not having more than one ship surgeon to look after the many passengers, and check diarrhœa in its commencement.

Dr. Gihon, of the Navy, was asked to speak, and said that while the health officer of this port was not to blame, the passengers, sick and well, ought to have been taken off the vessel immediately on its arrival. If necessary, they might have been transferred to another vessel, and steamship companies should keep one for this purpose. Then the ship should be thoroughly cleansed and disinfected, which was a great work. The speaker thought few people knew what thorough cleansing of a house was. The undertaking was so great that he recommended they commence at the dirtiest part, the cellar, lest they get tired and stop at the second floor instead of at the attic. The greatest danger in New York and Brooklyn was in the cellars.

Dr. Donovan showed specimens under the microscope and cultures from the cases which had occurred in the city.

The Paris Academy of Medicine wants a better home, and has asked the government to give it the old Mont de Piété, in the rue Bonaparte, near the School of Fine Arts.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, March 23, 1892.

H. P. Loomis, M.D., President, in the Chair.

Cystic Lesions of the Ovary and Tube.—Dr. George C. Freeborn presented a large number of specimens illustrating cystic lesions of the ovary and tube. The first series of four specimens were examples of pedunculated cysts of the Fallopian tube, the so-called hydatids of Morgagni. These cysts were quite common, and the pedicles varied considerably in length, those shown in the specimens being mostly of the short variety. The next series consisted of seven specimens of hydrosalpinx, showing the arrangement of the cysts and their appearance at various stages. Then came three specimens of parovarian cysts, and following these, twelve specimens showing the small follicular cysts found in cases of chronic ovaritis, and six specimens of small retention-cysts of the ovary. The next series consisted of six specimens of what are called unilocular cysts of the ovary, in which the ovary is almost entirely converted into a good-sized cyst, so that scarcely any ovarian tissue can be found on microscopical examination. Then followed twelve specimens of multilocular cysts, and three of dermoid cysts. One of the latter was a rare specimen, as the whole cyst-wall was calcified. Three papillary cysts were also shown.

Dr. Freeborn called attention to the method which he employed in preparing these cysts, a method which he had described about three years ago. While in the fresh state, any rent in the cyst is carefully sewed up and a cannula tied in, and then the cyst is distended under a pressure of twelve to eighteen inches with Fleming's mixture of chromic and acetic acids. The distended cyst is then immersed in a large quantity of the same fluid for forty-eight hours, when it will usually be found that the cyst-wall has become sufficiently firm to preserve the shape of the cyst. This method of preparation is a great aid in studying the configuration of the surface, and the various attachments of a cyst.

Œdema and Inflammation of the Umbilical Cord.—Dr. R. G. Freeman presented an umbilical cord which was œdematous, and presented evidence of a localized inflammation about two of the vessels. Labor had come on three weeks before full term, and a fœtus of fair size was born dead. The placenta appeared to be normal. The umbilical cord was thinned out at the umbilicus, and was dilated in the middle to three centimetres in diameter. Microscopical examination showed an extensive collection of small round cells surrounding the vein, and a small collection around one artery. Most of these cells were in the jelly of Wharton. The condition of the cord, together with the fact that the child was dead before term, indicated a possible tubercular taint, but Dr. Bird, who had delivered the child, was unable to find any evidence of tuberculosis in the family, and there was no definite history of syphilis. Out of one hundred consecutive cases examined in the Sloane Maternity Hospital, only three presented an œdematous condition of the cord, and in these there was not so much œdema as in this specimen, and there was no infiltration of small round cells.

Dr. Freeman also showed the remains of the allantois in the cord.

Repeated Attacks of Dysentery and Hepatic Abscess.—Dr. G. M. Edebohls presented a specimen from a patient who had had repeated attacks of colitis during a period of six years, each attack being followed by an hepatic abscess, and each abscess being cured by operation, until, finally, the patient succumbed to the sixth abscess. The patient was a man forty-three years of age, who was perfectly well up to the summer of 1885. At this time, he had a violent attack of dysentery, from which he recovered, but slowly. He remained in fairly good health up to May, 1886, when he experienced pain in the epigastrium. When first seen by the speaker in August, 1886, this region was the seat of a tumor, five inches in diameter which, when punctured with an exploring needle, yielded pus. On August 31, 1886, an abscess of the right lobe of the liver was opened under cocaine anæsthesia, and ninety grammes of pus evacuated. Adhesions had formed between the liver and the parietal peritoneum. The abscess-cavity was irrigated and drained, and after three weeks the tubes were removed and the cavity quickly healed. He remained well until December of the same year, when a second abscess appeared, about five centimetres to the right of the former one. The diagnosis was again confirmed by puncture, and the second operation was performed under ether anæsthesia. This abscess was found in the liver substance at a depth of three centimetres, and contained eighty grammes of pus. After draining for three weeks, the wound closed, and the patient again enjoyed good health for four years, with the exception of occasional slight attacks of diarrhœa. In August, 1890, he had another severe attack of dysentery, and two or three weeks later began to suffer from pains over the right lobe of the liver, associated with chills and an elevation of temperature, as high as 103° F. The patient was etherized and an incision made into the abscess, which was found in the ninth intercostal space and eight centimetres below the skin level. As the tumor this time was not so prominent as on the previous occasions, the speaker said he was somewhat fearful that there would be no adhesions found, and had accordingly made preparations for a careful laparotomy, should this be required. It was fortunate that he did so, for after cutting through the abdominal walls, he found himself in the general peritoneal cavity. Exploring with the finger, he found that all the organs in the vicinity were normal, except for the bulging of the right lobe of the liver. The cicatrices of the former incisions were found, and it was ascertained that the peritoneum directly behind was again free, the adhesions having been absorbed, and their place occupied by normal peritoneum. The surface of the liver was sutured to the parietal peritoneum, and packed with iodoform gauze, and at the end of a week, adhesions having formed, the liver was incised, and a much larger quantity of pus evacuated than at either of the two previous operations. As the symptoms of sepsis continued after this operation, the presence of another abscess was suspected, and, as there was some pain on pressure in the eighth intercostal space on the right side posteriorly, a needle was inserted at this point, and another abscess found. This one was opened from behind in the eighth intercostal space. On reaching the pleura, the pleura, diaphragm, parietal peritoneum, and liver were successively perforated with a Paquelin cautery, and over one pint of pus evacuated. By introducing a pair of uterine dressing forceps into this abscess-cavity, and the finger into the anterior wound, it was ascertained that there was only one inch of normal liver substance intervening. This was perforated with the forceps, and thorough drainage established. Thinking that some of the abscesses might have been due to the retention of certain substances, it was thought best to keep the cavity open for some time, and to irrigate it daily.

On January 26, 1891, about three months after the operation, the drainage-tube was removed, and the wound allowed to close. On April 1, 1891, after another attack of acute colitis, another abscess appeared in the left lobe of the liver, and an incision under cocaine anæsthesia evacuated 80 grammes of pus. This abscess was situated at some distance from the surface of the liver, and adhesions had formed, so that no difficulty was experienced in the operation. The patient recovered, and remained well up to March 1, 1892, when he had another severe attack of dysentery, which was followed in two weeks by pain over the right lobe of the liver, and evidence of another abscess. This abscess opened spontaneously beneath the ribs, so that it was only necessary to insert a drainage-tube, and irrigate the cavity. The prolonged entero-colitis had, however, left the patient in a

very feeble condition, so that death from exhaustion occurred on March 23d.

The specimen, which had just been removed, showed about one-half of the large intestine, which was the seat of the characteristic lesion of dysentery. The liver showed the fresh abscess-cavity and also the cicatrices indicating where the other abscesses had completely healed. The kidneys were enlarged, and apparently the seat of fatty degeneration.

Each of these attacks of hepatic abscess, Dr. Edebohls said, was preceded by a typical attack of acute colitis, and the pus evacuated at each operation was examined carefully, as was also the subsequent discharges, for echinococci hooklets, but none was found. Unfortunately, no examination had yet been made for the amœba coli, but some of the pus from the last abscess would be subjected to examination for this organism. The case was one of considerable interest, for hepatic abscess is always looked upon as a serious affection, and yet here five operations were successfully performed for this condition, and the patient only succumbed to the sixth abscess, which opened spontaneously. It was also interesting to note that there had been no diminution in the bulk of the liver, notwithstanding the large quantities of pus which had been evacuated at various times.

Dr. J. S. Ely said that the absence of any diminution in the size of the liver was extremely interesting, in view of some recently published experiments made upon animals by Ponfick, who found that considerable portions of the liver could be removed, and yet after a given time, when the animals were examined, it was found that a very considerable new formation of liver-tissue had taken place.

Gun-shot Wound of the Brain.—Dr. J. S. Thacher presented a brain as an illustration of how one bullet might cause two wounds. The specimen had been removed from a patient in the hospital service of Dr. McCosh. The man lived eight days after the injury. The bystanders who saw the shooting said that only one shot was fired, there was only one empty chamber in the revolver, only one hole in the skull, and only one bullet was found. Although there was only a single external wound, situated just above the bridge of the nose, there were two openings through the dura mater, one on each side of the falx, and two cavities, situated symmetrically, one in each frontal lobe, about one inch in transverse diameter, and having softened walls. They extended up to the tip of the anterior horn of the lateral ventricle on each side, and contained clotted blood. The bullet was found just inside of the inner plate of the skull. One of the holes may have been made by a splinter of bone.

A Very Rare Malformation of the Bladder.—Dr. Ely presented a specimen which was removed from a man who had presented no bladder symptoms during life. At the autopsy, in cutting through the abdominal wall, the knife cut through the fundus of the bladder, which was found to extend up to within one inch of the umbilicus. The bladder was long and slender, and its walls were of normal thickness, and not at all diseased. This malformation of the bladder appeared to be due to a persistence of the urachus. A review of the literature of the subject shows that this malformation is extremely rare. Luschkur described a persistence of the epithelial structure of the urachus, and cysts of the persistent urachus sometimes occur, but he could find no case on record in which the bladder extended upward in this peculiar manner.

Dr. Ely also exhibited the bladder of a child at birth, showing how, when distended, it extended up to the umbilicus, and how very short the urachus is at this time.

Rupture of the Kidney During Parturition.—Dr. J. C. Smith presented kidneys which had been removed from a child on the day previous. One of these showed a rupture which he believed had occurred during labor. The labor was a difficult one, the child presented by the vertex, and was delivered by the forceps, much difficulty being experienced in the delivery of the hips. The obstruction to delivery was due to a projection forward of the coccyx. The autopsy showed a large extravasation of blood around the kidney behind the perineum, with a little bloody serum and coagulated lymph in the peritoneal cavity, and a beginning peritonitis. The child died with symptoms of meningitis, but there was no evidence of this at the autopsy.

The Growth of Voluminous Cultures of the Tubercle Bacillus.—Dr. T. M. Prudden said that in his published account of the technique of making tuberculin Koch describes the method as consisting in floating little scales of the cultures of the tubercle bacillus on fluid culture media. This is not a new method, as it has been employed by the French for some time, and in this country it has been used for over a year by Trudeau. The tubercle bacilli grow voluminously if floated upon an appropriate fluid medium, but the growth is very scanty if the pellicle so formed is allowed to sink to the bottom. He had found that this difficulty could be obviated by introducing sufficient cotton, sterilized by heat, into the vessel to allow of the scales of the tubercle bacillus resting on the fibres of the cotton.

Extensive Valvular Disease of the Heart.—Dr George P. Biggs presented a specimen of the above. It was removed from a girl, thirteen years of age, who had had two attacks of rheumatism, and had complained for some time of marked dyspnœa on slight exertion, and of considerable cough. At the time of her admission to the hospital there was moderate general anasarca, the cardiac area was decidedly increased, and the apex beat was in the sixth space, four inches to the left of the median line. A presystolic and a systolic murmur were heard just above the apex, the latter being transmitted to the left. At the second intercostal space to the right of the sternum, a systolic murmur was heard, which was transmitted to the neck, and a diastolic murmur, which was transmitted downward and to the left. The area of the liver was considerably enlarged. At the autopsy the heart was found to be about the size of a fully developed adult heart, and gave evidence both of hypertrophy and dilatation. The aortic valve showed thickening and retraction, the mitral valve showed very marked stenosis, and the tricuspid valve showed a moderate but distinctly appreciable narrowing of its surface. The pulmonary valves were normal. The only other lesions were those due to chronic congestion of the various organs.

Dilatation and Extensive Atheroma of the Aorta.—Dr George P. Biggs also presented a heart which had been removed from an adult, forty-four years of age, in whom death had resulted from a pericarditis and a pleurisy following a septic condition connected with disease of the urinary passages. The aorta showed very extensive atheroma throughout its whole extent, with calcareous deposits in places, and at its origin, just above the valve, there was a distinct dilatation, five centimetres in diameter, with calcification of its walls. The valves were normal, except a marked thickening of the bodies in the centre, which apparently compensated for the relaxation of the valve at the base. There was no deposit of fibrin.

A Cyst Growing from the Hilum of the Spleen.—The President presented the specimen. The patient from whom the specimen was obtained was a woman, forty-six years of age, who died after an eight months' illness from cancer of the liver. The condition of the spleen was not suspected during life. Closely adherent to and apparently growing from the hilum of the spleen was a single large cyst, about five inches in diameter, and containing twenty ounces of a whitish, amber-colored, and slightly viscid fluid, rich in albumin. The wall of the cyst was an eighth of an inch in thickness, and from its inner surface projected several smaller cysts about the size of walnuts. These latter contained a brownish fluid, and microscopical examination showed the fluid contained cylindrical epithelial cells, fatty corpuscles, Drysdale cells, red blood-corpuscles, and granular material. The interior of the

wall of all the cysts was comparatively smooth and lined with cylindrical epithelium. In appearance, structure, and the character of the contents this cyst resembles an ovarian cyst.

Dr. Freeborn considered the specimen to be an ovarian cyst. It was probable that there had been some peritoneal inflammation and contraction by which the cyst had been lifted out of the pelvic cavity, and then adhesions had formed between the cyst and the spleen.

The Society then went into executive session.

Correspondence.

OUR LONDON LETTER.

(From Our Special Correspondent).

CHOLERA — BRITISH PREVENTIVE MEASURES — CHOLERA AND LITIGATION WITH SEAMEN— THE FIVE YEARS' CURRICULUM FOR STUDENTS—DEATH OF SIR GEORGE MACLEOD—THE HEALTH OF SIR RICHARD OWEN.

London, September 10, 1892.

Cholera is still the question of the hour, although the popular alarm caused by its first appearance on our shores has now largely subsided. Twenty-four cases of undoubted cholera have occurred since August 25th, and of these nine have proved fatal. There have been three cases, with one death, in London. Everyone of these twenty-four cases was introduced from the Continent, and so far there are no reasonable grounds on which to expect that the disease will become epidemic among us, as in 1866. In that year sixteen thousand persons were attacked, but the outbreak was limited to an area of East London supplied by the East London Waterworks Company, and a careful investigation showed conclusively that the area in question had been supplied with unfiltered water which had become contaminated with choleraic discharges. The lessons of that epidemic have not been lost, and never have our sanitary arrangements been in a more perfect state for warding off a threatened outbreak than at the present moment. Water-supplies and drainage have been looked to, and sanitary inspectors have been active in condemning all meat, fruit, or vegetables deemed unfit for consumption as food. Prompt arrangements have been made for isolating any cases that may occur, and many of the hospitals and infirmaries have set aside beds for cholera patients. The clothing of all infected persons is to be destroyed at once, and choleraic discharges either disinfected or burnt. These measures have been carried out in those cases which have already occurred. An important step has been taken, with regard to the immigration of destitute aliens, which cannot fail to have a great influence in checking the introduction of cholera into this country through such agencies. Hitherto the authorities have had power, in the case of a ship arriving with cholera on board, to take the names of such passengers with the addresses to which they are proceeding, so that they can, if necessary, be kept under sanitary supervision. An order has been issued by the Local Government Board, extending these regulations (at the discretion of port medical officers) to all ships, whether infected with cholera or not.

At the present moment I believe that there is no case of cholera in Great Britain. The chief Medical Officer of the Local Government Board (Dr. Thorne Thorne) made a statement to that effect yesterday, and no intelligence of any fresh cases has since been received. Comparing the small mortality here with the ravages caused by the disease abroad, there does not seem any cause for great alarm here. Even if we add to the cases of undoubted cholera (24) those of choleraic diarrhœa (25), we only get a total of forty-nine cases. The outbreak on the Continent is already on the wane since the advent of cooler weather, and it is possible that by the time these lines appear in your pages all cause for apprehension may have disappeared.

Cholera has been the occasion of at least one case in the law courts. The crew of a Liverpool ship were charged before the magistrates at Falmouth yesterday with refusing to proceed with their vessel to Hamburg. They had refused on account of the prevalence of cholera at the latter port. It was stated on behalf of the owners that there would be no risk of infection, as it was proposed not to land the men at Hamburg, but to transfer them to other steamers at Cuxhaven which would bring them home. The defendants' solicitor, however, said that if the men were discharged at Cuxhaven, the vessels which would bring them back to this country would have come from Hamburg, and would carry in the tanks and bilges the infected or contaminated water of that city, as well as vegetables and other provisions, which might also be sources of contamination. He hoped, therefore, that the Bench would hold that the crew had reasonable cause for their refusal to carry out their articles. The case was adjourned till evening in order that additional information might be obtained. On the resumption of the proceedings several telegrams were read, and in one of these it was stated that Cuxhaven was not infected, but that cases of cholera had occurred there. The magistrates decided to dismiss the case, and the nineteen seamen were discharged.

Commencing with the coming winter session, the medical curriculum will in future be one of five years. Nominally, indeed, the new regulation came into force at the beginning of the present year. Most students, however, enter in October, and the dividing line may therefore be fairly drawn now between students under the old and new regulations, respectively. A certain amount of elasticity is allowed as to the way in which the fifth year is to be spent by the student. Half of it may be spent otherwise than at a medical school, *e.g.*, at a special hospital or workhouse infirmary. No detailed arrangements have yet been made as to the subjects to be taught in the medical schools during the fifth year. A course on mental diseases is proposed at University College, and both at Charing Cross and Westminster Hospitals; at the two latter institutions ophthalmology will also form a subject of instruction during the same period. At St. Mary's Hospital diseases of children, fevers, hygiene, and psychological medicine are to be studied during the fifth year. No announcements have been made as to the instruction which will be given at the other metropolitan medical schools during the final year, but it may be surmised that clinical teaching will occupy an important place.

Sir George Macleod, of Glasgow, died suddenly last week, aged sixty-five. He was a son of the well-known Scotch divine, the late Rev. Norman Macleod. Sir George Macleod had a distinguished career as a surgeon. He acquired a large experience of military surgery in the Crimean War, where he was surgeon to the general hospital in the camp before Sebastopol, and became senior surgeon to the civil hospital at Symrna. On his return to Glasgow he became surgeon to the Royal Infirmary, and subsequently surgeon to, and lecturer on clinical surgery at, the Western Infirmary. At the time of his death he was Regius Professor of Surgery at the University of Glasgow, Surgeon to the Queen in Scotland, and Crown Member for Scotland of the General Medical Council. He was knighted five years ago. He was the author of several contributions to surgical literature.

The eminent anatomist, Sir Richard Owen, is much better in health, and there are now fair hopes of his recovering from his recent severe attack of stomatitis, in spite of his advanced age—eighty eight.

First Class in Geography.—A London physician, writing in *The Lancet*, said that he had been offered some land in South America in payment of a charge for medical attendance, and on consideration had decided to accept it, and thus become "a landed proprietor in the United States!"

HOW SHALL WE TREAT CHOLERA?

To the Editor of the Medical Record.

Sir: In view of the imminent danger of an outbreak of cholera in our community, the disease having been officially declared to be present in this city, I deem it timely to offer to your readers some suggestions for the treatment of this dread disease.

From what personal knowledge has been derived from the daily press, I would infer that the management of cases of cholera in the quarantine hospitals of this port has been mainly expectant, that is to say, limited to enteroclysis of Cantani, with hot solutions of salt and bicarbonate of soda, with the addition of tannin, and the use of stimulants. This method will no doubt have its followers, and in a certain number of cases prove successful, but it is difficult of employment in a tenement-house practice, where the majority of cases is likely to occur.

Therefore I wish to call attention to a very simple and rational method of treatment, one that can be employed promptly and requires little loss of time to a busy practitioner. In the July number of the London *Practitioner* for 1875, Surgeon A. R. Hall, of the British army, who had a large experience in the treatment of cholera in India, publishes his views on the treatment of this disease, accompanied with communications from a Mr. Higginson, civil surgeon of Kheir, in Oudh, indorsing the success of his method.

The method of Hall is the use of a ten per cent. solution of chloral hydrate, giving from ten to twenty drops hypodermatically at a time, according to age and severity. The injection is repeated in from a half to two hours, and again later if found necessary, according to the condition of the case. The strength of the solution is such as to avoid suppuration or sloughing, and is so graduated that every ten drops represents one grain of chloral.

The method is based upon the pathological condition produced by the cholera poison, viz., an irritation of the vaso-motor centres, causing excessive contraction of every artery and arteriole in the body, together with the muscular structure of the heart. This view easily explains all of the symptoms of collapse, and rationally demands the administration of a sedative to the sympathetic nervous system. As vomiting excludes the administration of any remedy by the mouth, the hypodermatic method is the most successful.

The results, as given by Mr. Higginson in seventeen cases treated by this method, are highly encouraging, only two deaths occurring, one of these being due to negligence on the part of the native physician, who was afraid to give sufficient chloral to secure reaction from the collapse.

Certainly this is a splendid showing for the treatment, when we consider the severity of the disease as it occurs in India, and know of its great mortality. I therefore think we should feel encouraged to employ it, rather than depend upon opium or morphine or any of the antiseptic remedies, except in the premonitory diarrhœa. For the premonitory diarrhœa occurring during the prevalence of cholera I should prefer the use of naphthalin in five-grain doses, repeated every two or three hours, as it is the only antiseptic that does not undergo decomposition in the entire length of the alimentary canal. Moreover, it is harmless, as it is not absorbed. The same cannot be said of salol, which darkens the urine considerably. The hypodermic employment of a solution of common salt, one drachm to the pint, after the manner suggested by Professor Osler in his recent work on "Practice of Medicine," would be preferable to enteroclysis in desperate cases of collapse, but if any one of your readers will refer to the article of Hall I have mentioned, they will scarcely regard as necessary any measures further than the use of hypodermic injections of chloral hydrate.

S. Henry Dessau, M.D.

47 West Fifty-sixth Street.

English has been recognized as the official language of the Imperial University of Tokio.

THE TREATMENT OF CHOLERA BY RECTAL INJECTION.

To the Editor of the Medical Record.

Sir: With cholera in our port and in our city, and also in many parts of our country, it is the duty of every physician who has had any practical experience in the treatment of this hidden pest to speak out and tell what he knows about the treatment, and what has been his success. In the epidemic of 1849, in this country, the older physicians turned over their cholera patients to the young practitioners, and gave them little or no advice about the treatment. We were thus thrown upon our own resources, and did the best we could. We could find no pathology in the medical books, and no reliable remedies. But we very soon learned the symptoms. There was purging of watery stools without any pain and without any fecal odor. The patient would pay no attention to his diarrhœa, until he began to vomit. Then he would send for the doctor, who would usually prescribe opium, camphor, bismuth, etc. He would also order mustard plasters over the stomach and bowels; but the purging and vomiting would continue, cramps in the extremities would set in, and collapse would soon follow. The body now became cold and purple, the voice husky, often reduced to a whisper, the purging and vomiting still continued, and in a short time the scene was over.

Now and then a vigorous patient would rally, and reaction come on, especially when the dejections had not been copious, and not frequent. The treatment was entirely empirical, and when the epidemic was over physicians were quite as unsatisfied and unsettled about the treatment of cholera as they were before it came.

The epidemic of 1854 was not as severe as in 1849—at least the mortality was not so great. The Board of Health in Williamsburg, then a corporate city, opened a cholera hospital July 30th, and placed it under my charge. During August and September thirty-six patients were admitted, and most of them in an advanced stage. Many were of intemperate habits and broken constitutions, and few recovered. Two men were brought in with congestion of the brain from frequent doses of opium, and were both in collapse, and both died. One woman was received in an advanced stage, with a babe aged ten days. Both died. Another woman was convalescing from cholera, but died of uterine hemorrhage from miscarriage. From this class of patients it will be readily inferred that most of them died, and such is the fact. Only fifteen out of the thirty-six recovered. The treatment at first was opium and astringents to check the stools, and stimulants to keep up the strength. Unfortunately all remedies were vomited as soon as they were taken. I at once began medication by the rectum, and ordered astringents to be thrown into the bowel after each stool, but the purging and vomiting continued. Stimulants were combined with astringents, and the stools were not quite so frequent. Brandy and strong tea were then used, and sometimes brandy and coffee, and encouraging results followed. At last coffee and brandy injections were used exclusively, and four to five injections would usually control the purging and vomiting also, and the patient would show signs of recovery. The pulse became stronger, the body would become warm, the husky voice was more natural, and the cramps in the extremities were less distressing; the patient would fall into a stupor for a few minutes, and then cry out with cramps. He would roll about the bed, and be liable to have another stool, when another injection would be given, and this would probably be the last one necessary. After an hour or so a little hot tea or coffee would be given the thirsty sufferer, and repeated frequently if there was no disposition to vomit. Later he was allowed to hold ice in his mouth, but he would crush the ice with his teeth, for he was too thirsty to wait for it to melt. In six or eight hours the patient would be likely to have a small stool of more consistence and some fecal odor. If there should be no stool in twelve or fourteen hours

pill of calomel and camphor would be given, with a desire to produce a fecal stool. Strained beef-tea was now given cautiously, and with no relapse the patient would recover.

Of the fifteen patients saved in the hospital at least ten recovered after the brandy injections were decided upon. Indeed, this treatment saved nearly every patient after it was fully adopted and strictly carried out.

The two nurses in the hospital, husband and wife, had learned when and how to give the injections. Patients would be brought in at midnight, purging and vomiting, and both would be under control before morning. It was considered necessary to dilute the brandy, to prevent any inflammation of the mucous membrane, and coffee was chosen, as it was considered a powerful nerve stimulant. An ounce of brandy with two ounces of coffee constituted the injection, as a rule. This was thrown into the rectum with an old-fashioned metal syringe, and followed promptly after each stool. For a strong and robust person the brandy was increased. If the patient had lost a great deal of fluid, no time should be lost in giving the injections. This loss of fluid from the intestinal canal must stop of itself, or must be checked, or the patient must die. This is perhaps putting it more plain than professional, nevertheless it is true.

In the epidemic of 1866 there were not enough cases of cholera in New York to give the treatment by injection a thorough trial. Dr. Dalton, Sanitary Superintendent, had heard something about brandy injections, and recommended his sanitary doctors to try the treatment. But they began the treatment too late, and after the old routine treatment had failed, the young doctors were directed to begin the treatment of cholera with "a mixture of laudanum, spirits of camphor, and chloroform. But if the patients cannot retain the medicines in the stomach, then a mixture of brandy and strong tea is to be injected into the bowels until the discharges have ceased." If the doctor had any faith in brandy injections (and he appears to have had a little), why did he not instruct his young physicians to begin the treatment by injections at once? The first symptom of cholera is one or more liquid stools; and this is the first symptom that demands the doctor's attention. If the stools are checked at once, there may be no vomiting, and very little cholera in that particular case. There is no great prostration until there has been a considerable loss of fluid. The physician who checks the cholera-stools early and keeps them under control, takes courage at once, and so does his patient.

Dr. Alonzo Clark taught his class that cholera depended upon paralysis of that portion of the ganglionic nervous system that presided over the alimentary canal. Certainly we know that gallons of fluids escape from the body through the intestinal canal, and they escape with alarming rapidity, and vomiting must check them or there is no hope of recovery.

Now a word to the doctor to simplify his treatment. First, he must arm himself with a six-ounce syringe, a bottle of good brandy, the older the better, and a bottle of black coffee, to start with. When he reaches his patient, he should give him an injection of brandy and coffee, even before he looks at his tongue, or feels his pulse. Then he will examine his patient, and find out what is the matter. If it should prove to be a simple case of diarrhœa, the injection will do no harm. If it should be cholera, a very important step has been taken in the treatment of the case.

Now look at the stools, or the fluid that has been vomited, and see what they contain. If they are characteristic of cholera, have another injection ready the moment he has another stool, while the bowel is empty, and throw the injection into the bowel at once. If the patient should be unable to retain the injection, press a napkin against the anus for a few minutes, mustard over the stomach and bowels, keep patient in bed and as quiet as possible. Repeat the injections until the passages are controlled; when this condition is reached there is no haste about further medication. Flannels should cover the body, and friction may be applied to the limbs to allay cramps. Hypodermic injection of morphine may be given, if the cramps are very severe.

Later treatment must depend upon the condition and symptoms of the patient.

Truly yours,

O. H. Smith, M.D.

New York, September 17, 1892.

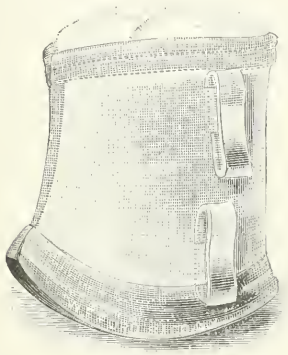
New Instruments.

AN APPLIANCE FOR ADMINISTRATION OF ETHER.

By W. K. Rogers, Jr., M.D.,

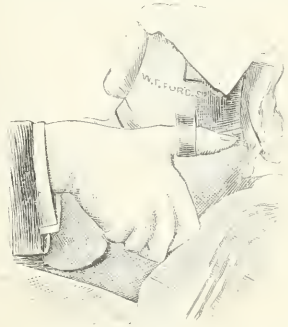
new york.

Strictly speaking, the contrivance is not original, being an aggregation of good points of existing devices. It is made of flexible rubber, to fold flat, and resembles the



gauntlet of a glove, with loops for thumbs, to facilitate holding in place, is convenient to carry, easy to clean, disinfect, and refit, adaptable to face of adult or child, admits of free use of hands for controlling jaw and tongue, wastes very little ether, and induces rapid narcosis.

One square yard of absorbent gauze is folded into a strip, the width of the cone. The strip is then laid in plaits like an accordion, as nearly as possible an inch and a half wide, a short end lapped over the bundle of plaits,



which is to be wadded tightly into opposite end of cone from that applied to face—*i.e.*, into small end if adult, large end if child—the covered side of gauze even with top of cone.

On removing gauze, turn the cone inside out, scrub, and soak in bichloride.

A wet towel placed over the cone during use, will save

a good deal of needless evaporation of ether, without interfering with respiration.

Our statistics at St. Luke's Hospital, for which indebtedness is due largely to Dr. Dade and Dr. Brouner, of the House Staff, show that this device uses an average of two and three-quarter ounces of ether an hour; three to five minutes being the average time for producing narcosis.

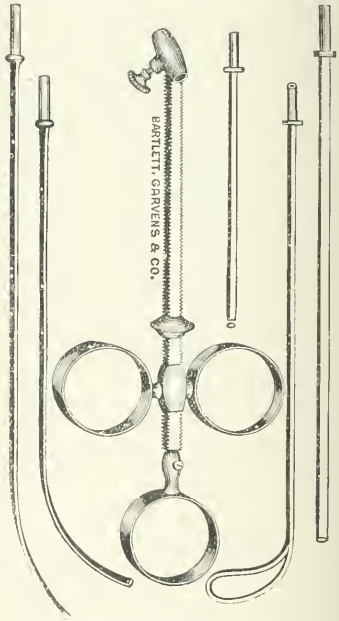
One cut represents the cone as made by the W. F. Ford Surgical Instrument Co., the other, cone and position of hands in drawing the jaw forward. The lower angle of cone should rest on the chin, not over it.

A MODIFIED HARTMANN SNARE—SOME REMARKS UPON ITS USE.

By JOHN DUNN, M.D.,

RICHMOND, VA.

The snare, of which there are cuts accompanying these remarks, seems to me to have certain advantages over any with which I am acquainted. The cannula for the nose and faucial tonsils is not a cylinder, as is the case with Bosworth's, Jarvis's and others, but is made perfectly flat its whole length, so that it resembles somewhat a very narrow knife-blade; its width is 3 mm., its antero-posterior diameter is only $\frac{3}{4}$ mm., so that the opening at the end is just large enough to admit easily a No. 3 piano wire. Furthermore, the far end of the cannula has a knife edge. It is to this flattening of the cannula, blade and tip, that is to be attributed its chief excellence over other forms of cannula. Where the cannula is cylindrical there is more or less tendency, after threading it, for the wire-loop to revolve as it strikes against the various projections in the nose; and this makes it more difficult than necessary to adjust with desired accuracy over the part to be removed. In the flattened cannula this tendency of the wire to revolve is done away with. Again, in the round cannula the loop enters the tube in its mid-plane, leaving the distance of half the diameter of the tube behind the wire where it enters the tube. This makes an unnecessary difficulty in removing growths to their very base. In the Jarvis snare that I have the diameter of the tube is 3 mm., a diameter so great as to have caused me to discard this, in many respects, excellent instrument. In the flattened cannula, whose antero-posterior diameter is less than 1 mm., the end of the cannula can be forced even into the origin of growths or hypertrophies. So exactly can this be done that this form of cannula can be used for snaring single granulations of the pharynx. Again, the flattening of the cannula allows it to be carried where the round cannula will not go, and thus at times individual small polypi can be removed at their origin with it, when with the usual round cannula we have to be satisfied with removal of a part of these growths. Of especial value is this flattened form of the cannula for the removal of hypertrophy of the posterior end of the inferior turbinate. Here the cannula lies flush against the inferior turbinate its whole length, and with the steel wire slightly bent the removal of this hypertrophy becomes one of simplest operations done in the whole range of nasal surgery; so that, when White's palate retractor is in place—and as the use of this instrument allows the operator to see perfectly the part to be snared it should always be used in these cases—it is rarely necessary to make more than one attempt for the removal of this hypertrophy. In the operations for deflected septum or the removal of spurs of the septum after the use of the saw it often happens that there remain shreds of connective tissue, or particles of the spur, or even, at times, when we have sawn through the spur, it remains attached by a part of the mucous membrane which evades all our attempts to reach it with the saw—in all of these cases the flattened cannula allows an accuracy in the removal of these difficulties which cannot be obtained with the round cannula. In the case of anterior hypertrophies, and of those hypertrophies which make their appearance along the under side of the inferior turbinate, so that this turbinate is always touching the floor of the nose, where removal is deemed the best treatment, by using the flattened cannula the transfixion needles can be done away with. In regard to the use of the snare for the removal of tonsils, I consider it, of all methods, the best, so that for nearly three years now I have used no other where the patient would submit to having the "tonsils cut out." Where the patients have preferred it, of course, the cautery has been used; my advice has been, though, to have the tonsils removed with snare, and for more than a year I have not used the cautery for this purpose. The snare has many advantages over the guillotine. One snare does for all cases. The bleeding and pain are in every case less; in most cases, after the application of cocaine, so trivial as to amount to nothing. It can be used in those cases where the tonsils are developed so far down the throat that no guillotine as yet constructed could reach them. In those cases where the tonsils have become adherent to the pillars of the fauces, with the proper assistance of a small bistoury a snare can be used



with much satisfaction. The snare can be worked as rapidly, or even more rapidly, than the guillotine, and those efforts at gagging, caused in many cases by the endeavor to force the guillotine into place, are not necessary where the snare is used. On one occasion, in a young lady sixteen years of age, I removed with the snare, at one sitting, both tonsils to the roots, when they were sufficiently swollen to meet across the pharynx and to have exudation coming from the follicles. This case healed beautifully without further treatment. The bleeding at the time of the operation amounted to nothing.

The cannula next the handle to the left in the cut above is to be used for the removal of post-nasal adenoids and other such work in the post-nasal space as can be done most advantageously through the mouth. It is, also, like the straight cannula, flattened, so as to lie if necessary close against the post-pharyngeal wall; the free end is broader than is the case with the straight cannula, so as to allow the formation of a broader and more circular loop close to the end of the cannula. The cannula next

straight cannula in the above cut is in the form of post-nasal guillotine. The guillotine has a groove in into which presses the wire, which in turn is kept in ace partly by the shoulder of this groove and partly by e resiliency natural to the well-made piano-wire. The e of this instrument is suggested by its appearance. It to be passed into the naso-pharynx, and pressed firmly ainst the posterior wall, after which the wire is drawn rough the cannula, cutting through all the tissues con-ned in the guillotine. There are certain developments the third tonsil where this guillotine can be used ad-ntageously and to the saving of much time. These illotine cannulas are of two sizes. The back edge of is guillotine is sharp, so that it can be used as a curette those cases where snaring is impossible. The left hand ure in the cut is the cannula to be used in snaring the lenoid tissue from the base of tongue. The patient is re made to pull the tongue forward, as in operations in e larynx, when with the aid of a laryngoscopic mirror is hypertrophied tissue can be seen, and, by pressing the it cannula firmly against the tongue, can be snared in ch quantities as may be deemed advisable. I have und this to be the most satisfactory method of reducing is tissue where true hypertrophy of it exists.

The small cannula is for use in the ear, and the instru-ent makers are to be complimented upon the delicacy f its construction. The handle is after the German odel, and has advantages over any other handle I have en. The ring on the end of the handle revolves, so that ie handle can be used in any position. The cannulas into a tube placed at an angle of forty-five degrees to ie handle, so that the light from the forehead mirror is ot interfered with by the hand manipulating the instru-ient. The snare is tightened by pulling with the index-id middle-finger in the rings of the finger-piece at the de of the bar. This finger-piece is very strongly made, nd slides up and down a bar which is cogged. There eed be no cogs anteriorly and posteriosly, so as to allow ie finger-piece to slide easily along the bar. The handle provided with a rider, so that the snare can be used for ow as well as rapid work. This snare can thus be made draw either with the screw motion or by straight press-re. The handle and cannula are, of course, detach-ble, the cannulas fit into the tube at the end of the andle and are held in place by a small screw placed be-eath the handle at this point. A laryngeal snare, for se in those cases where a laryngeal snare can be of ervice, is also flat and has the curve of one of the rench laryngeal forceps. The differences between this nare and the Hartmann are slight, and consist chiefly n changes of the proportions of the cannulas, which are engthened and flattened their whole length; in the pro-luction of a more delicate cannula, with especial reference o preventing any slipping of the noose when once formed, nd in the addition of a curette to the guillotine, whose proportions are different from that in the Hartmann case. No claims are here made for originality, and yet, I think, he modifications will be found to greatly enhance the alue of the Hartmann snare. The snare was made for ne by Messrs. Bartlett, Garvens & Co., of Richmond, Va.

Small-pox and Anti-vaccination.—A cable despatch says that an epidemic of small-pox has broken out in the town of Leicester, and that English sanitarians are watching its progress with considerable interest. The people of the town have for years strongly resisted every effort to enforce the law requiring the vaccination of children, and the Government concluded to leave the people alone. Small-pox had not invaded Leicester until very recently. Physicians and others interested in sanitation have expressed the opinion that, if it ever gained a foothold it would ravage the town, and now their prophecy is in course of fulfilment.

The Birth-rate in London, taking the average of the past ten years, is 2,866 per week.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 17, 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	58	9
Scarlet fever	44	5
Cerebro-spinal meningitis	1	0
Measles	37	2
Diphtheria	79	18
Small-pox	6	2
Cholera	6	5
Varicella	0	0.
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0

Original Keratosis.—A curious Jewish tradition reports that Adam was entirely clothed in a hard, horny skin, and only lost it and became a subject to evil spirits on losing Paradise. The nails are the remnants of this dress, and whoever cuts them off and throws them away does himself an injury. An old Persian chronicle says that Eve also possessed this dress, and the nails were left to remind them of Paradise.

Straightening the Eyes of the Japanese.—"I was recently in Japan," says an American, "and I met there several American and German doctors who were getting rich by straightening the slant in the Japanese eye to make it look like the beloved Caucasian's optic. The Japanese, you know, show the traces of their Mongolian origin more plainly in the shape of their eyelids than in the color of their skin, and those who can afford it are ridding themselves of this unmistakable evidence of their despised ancestry by submitting to a simple and comparatively painless operation, which consists in the surgeon slitting the outer rim of the eyelids in a straight line for the barest infinitesimal part of an inch. The wound is then covered with a thin piece of chemically prepared sticking-plaster, the faithful subject of the Mikado goes on about his business as if nothing had happened, and in a few days the wound is healed and he looks on his envious fellows through lids as straight as the American's."—*Medical Times.*

A Palatable Castor-oil may be prepared, according to Dr. Standke, by thoroughly washing with hot water freshly expressed castor-oil, and incorporating sufficient saccharin to give it a sweet taste; it is then flavored by adding small quantities of oil of cinnamon and extract of vanilla. The preparation is stated to keep very well, and to be very agreeable in taste.

A Post-mortem Phenomenon in Cholera.—A Vienna physician, Dr. Frey, states that the supposed burial alive of patients apparently dead from cholera may be explained by the fact that the corpses of those who have died from the disease are for some time after death subject to convulsive movements of some muscles, or even of whole groups of muscles. Professor Eichhorst also relates that on one occasion he had left a patient for dead, when, three hours later, he was told that the dead man had revived. He found that the muscles of the upper arm were giving short, quick motions, following each other rapidly, which were interrupted by contractions of the whole group of muscles, whereby the forearm was visibly contracted. The fingers were also distinctly observed to be moving, as though playing a piano. It was only after three hours that the movement of the muscles ceased.—*Hospital Gazette.*

A Dog without a Brain.—Professor Goltz, of Strasbourg, has succeeded in keeping alive three dogs, after having removed the whole of the cerebral hemispheres.

One lived fifty-one days, the second ninety-two days, and the third was killed after living eighteen months in this condition. In all three dogs the diencephalon had been more or less injured by the operation. In the case of the third dog, after he had been without his brain for over a year, he could be aroused from deep sleep through the sensation of touch. If an attempt was made to take him out of his cage, he showed signs of anger, snarled, and barked in more or less normal manner. He walked around in his cage without falling, or, if he fell on a slippery surface, he got up again without assistance. These movements were particularly energetic when the animal was hungry. The hearing, although very dull, was preserved; and he could be waked out of sleep by a loud noise. In the same way, the sight, although nearly gone, was sufficient to perceive a bright light. He could not smell at all; but his taste was not destroyed, as was shown by his declining to eat meat strewed with quinine. He could eat and drink, that is, his tongue, jaw, and pharynx moved like those of a normal dog; but food had to be put in his mouth, as he never made any attempt to get it for himself. There was entire absence of all those characteristics which are understood as intelligence, reflection, or understanding, but he could not be considered as a mere reflex mechanism. He had as much perception as a newborn infant. He was uneasy when he was hungry, and appeared satisfied after being fed. He became angry if he was waked from sleep or if he was pinched. The author believes that these experiments may modify many commonly accepted theories of the functions of the cerebral cortex—*Boston Medical and Surgical Journal.*

Insanity of an Asylum Superintendent.—A correspondent of a Vienna paper says that one morning the medical superintendent of a large lunatic asylum requested an attendant to hand him a pair of scissors. He noticed something unusual in the appearance of his chief and drew the attention of one of the physicians to the circumstance. The latter was somewhat surprised when the superintendent announced that it was his intention to open the skulls of some of his patients in order to ascertain the exact condition of their cerebral development. No time was lost in putting a limit to the scientific aspirations of the gentleman.

Taking an Advertiser at His Word.—A decision is reported by the London *Times* from the Court of Queen's Bench which should overwhelm the souls of many astute Americans with remorse at the thought of neglected opportunities, and which may well transfer the palm in the art of making money from New to Old England. It seems a certain company, which trades in a commodity called the "carbolic smoke-ball," had offered, as an inducement to the public to patronize their shop, a guarantee of $500 that any person using their nostrum should enjoy thereafter immunity from influenza. A woman in London took the advertisers at their word, bought and used their prophylactic, and thereafter suffered, like many of her unprotected neighbors, from an attack of influenza. The promise of immunity having thus been falsified the lady brought an action to enforce the alternative promise of a solatium of $500, and was met with a defence which put forward every possible ground of technical objection to the plaintiff's claim. The defendant pleaded that there was no contact, that if there was it was not stamped and could not be sued on, that it was a wagering contract and therefore void, and that it was a contract of insurance which was prohibited by statute. But the Court held that there was a contract, for there was a consideration received by the company in the price of the smoke-ball, and the Court added that the daily use of the article was sufficient to support the promise of remuneration. The defendant had not only issued the advertisement, but had stated "as showing their sincerity in the matter," that they had deposited £1,000 in bank, which the Court held must be taken as meaning that they were prepared to pay. The contract was also held not to require a stamp, nor to be a wagering contract, nor such an insurance contract as was regulated by statute. People who are silly enough, *The Lancet* says, in commentin on this case, to adopt a medicine simply because a trade man makes extravagant promises may thank themselve chiefly for any disappointment that ensues. Still for thi folly, which is only foolish and nothing worse, it is possibl to feel sympathy when the disappointment comes. It is pleasant alternative to learn that the dupe has been able as in the present instance, to enforce a sharp penalty, an that the process of reaping a harvest from the simplicit of one's neighbors is attended with dangers of miscarriag which must materially diminish its attractiveness in th eyes of those people who supply the popular demand fo quack medicines.

Cremation of Cholera Victims.—The London corre spondent of the *Sun* says that the agitation in England i favor of cremation in the case of all cholera victims i increasing. Sir Spencer Wells sent to the *Graphic* re cently the results of some experiments which have startling bearing upon this branch of the subject. H said that "some persons doubt whether poison can b carried through the earth for any considerable distance but the fact has been experimentally proved as to salin solutions. A salt of lithium was sown over a plot o land more than one hundred and fifty yards distant fron a well, the water of which contained no lithium. Repeate examinations were made, but it was only on the eigh teenth day that it was proved that the solution had per colated through the soil into the well. Instances of con tamination of water by animal impurities have long bee too well known, and now the specific germs of infective diseases are known to propagate in the same way. In th botanic garden of Lyons flower pots were filled with earth on June 16, 1891, and some earthworms were added in each pot with some of the sputa of tuberculous patients and fragments of lung from their dead bodies. A month afterward it was found that the earthworms con tained tubercle bacilli in large numbers, and that guinea-pigs inoculated with them soon died with general tuber culosis. Whatever the bacilli may be, whether tubercular, typhoid, or choleraic, in bodies buried in the earth, i is incontestable that earthworms, everywhere so numerous and active, may preserve the bacilli in their bodies during many months, still living and losing none of their virulent properties and power of rapid germination or reproduction. These are the grounds on which we assert that bodies after death from cholera ought to be cremated, not buried."

Beriberi prevails extensively in the Malay Peninsula.

The Water Supply of the Paris Suburbs.—The first case of cholera, cholerine, or cholera nostras which occurred in Paris this summer appeared in the Asylum of Nanterre. The water for this institution comes from Suresnes, on the Seine, a point at which the river has already received the contents of fifty-two sewers. A man, described as a confirmed drunkard, had just been admitted when he was taken ill and died, apparently from cholera. The authorities were not able, or in any case failed, to obtain any information as to his antecedents. Nanterre is a prison and also a sort of asylum for vagabonds. When the epidemic assumed a serious aspect, the number of inmates was reduced from about 4,000 to 3,000. Soon other cases occurred in the neighboring districts of Suresnes, Puteaux, and St. Denis. The Seine water from the Suresnes intake was found to contain, after filtration, 37,000 bacteria to the cubic centimetre, but the specific bacilli of cholera and of typhoid fever were not discovered. If the course of the Seine be followed to the water-intake at Marly, which is close to St. Germain, it will be found that the river has received at this point the contents of 108 sewers, including the main drains and two-thirds of the Paris sewage.

Medical Record

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Original Articles.

SUMMARY OF WHAT CAN BE ACCOMPLISHED IN THE TREATMENT OF CHRONIC BRIGHT'S DISEASE.[1]

By HENRY B. MILLARD, M.D.,

NEW YORK.

FOREIGN CORRESPONDING MEMBER OF THE ACADEMY OF MEDICINE, PARIS, FRANCE.

BEFORE considering what may be hoped for or accomplished in the treatment of chronic Bright's disease, it is indispensable to state with precision what pathological conditions are to be considered as coming under the name of Bright's disease, or Bright's diseases. The cases described by Bright himself were characterized by œdema or dropsy, albuminous urine, uræmic symptoms, and extensive renal changes. Yet perhaps even the greater part of the cases which are loosely called "Bright's disease," present none of these conditions except that of mild albuminuria. That physiological or normal albuminuria exists, I do not believe. I think the thorough consideration and arguments presented by Lecorché and Salamon (loc. cit.) upon this vexed question, show that it does not, and in the new edition recently published of my own work on Bright's disease, I have devoted considerable space to this important subject. Thus far, none of my arguments have been refuted.

For the purposes of this paper I shall exclude the cases of simple, mild, chronic albuminuria, such, for instance, in which the urine does not contain more than three centigrammes (about one-thirtieth of one per cent.) to the litre, which are unaccompanied by renal epithelia or casts, where there is no diminution in the amount of solids excreted, the functions of the kidneys are not deranged, and the general health does not seem to be impaired. And such cases are extremely common. I desire to state what has been and what may be the result of treatment in those cases in which organic changes in the kidney have brought about more or less grave disturbances of the health.

In advanced cirrhosis, where the interstitial tissue is contracted, and the cortex retracted and hardened, so many of the tubules must, of necessity, be obliterated or narrowed, that there would be a great loss or destruction of their investiture of epithelia, and there would not be left enough of these to enable the kidney to perform its normative functions, namely, the formation from the blood of the capillaries which surround the tubules (and often many of the capillaries are inflamed and sclerosed) of the solids which are excreted in the urine. The result of these conditions would be the excretion of the aqueous principles of the urine, containing but little solid matter in solution, and the retention in the blood of elements, which, perhaps, by their decomposition, contribute to the poisoning of the system and the irritation of the nervous centres, and, finally, the dire catalogue of the symptoms met with in advanced cirrhosis. In such cases we can ordinarily hope to accomplish nothing more than to palliate symptoms, and perhaps prolong life. Recovery or a cure is not to be looked for.

Likewise, where the kidneys have undergone considerable fatty change; in the amyloid kidney and in the large white kidney; where there is a daily loss of considerable quantities of albumin, the tubules being choked by swelled epithelia or filled with casts; where the casts from the broad tubules predominate; where the glomeruli are inflamed and incapable of separating the aqueous principles, and the urinary secretion is diminished; and where these changes are fixed and chronic, little, perhaps nothing, is to be expected in the way of a cure.

Nevertheless, between the numerous cases of mild chronic albuminuria and those of advanced cirrhosis and chronic parenchymatous nephritis, there exist many, even severe, forms of nephritis in which the structural changes are marked, and even chronic, and so great as even to produce grave conditions of health and endanger life (I do not here allude to acute nephritis), where much, perhaps everything, can be hoped for, and even expected, from well-directed therapeutics. In these cases we are not confronted by a condition of abject helplessness, but may address ourselves to the work of relief strengthened by a certain sense of power.

When the epithelia are destroyed, they are never restored, their place being taken by a new formation of flat, spindle shaped cells—endothelia—between the basis of the epithelia and the so-called structureless membrane; sometimes nucleated, though more frequently not. These may be embryonic or aborted epithelia. Of course it is no more possible to produce a new growth of epithelia than it is to restore hardened connective tissue or contracted or shrunk up glomeruli to their normal state. This must be conceded.

But in all chronic cases which are susceptible of cure there is an intercurrence of acute or subacute inflammation; and this it is which I believe we cure or arrest; and that in chronic nephritis there is a constant effort to develop these new inflammations. The cirrhosis, the destroyed tubules, the obliterated tufts, these conditions must remain. But this being the case, can a cure be expected?

I answer that even then there are cases which are susceptible of a practical cure, or, at least, to such an extent that the renal functions will be unimpaired, the nutrition of the system will be unaffected, and no symptoms referable to the kidneys will exist. This is possible: 1. Because only a moderate amount of interstitial tissue may be affected, and so few of the tubules, as to leave sufficient healthy epithelia to enable the kidney to perform its functions. So long as this condition is equable and constant, no perturbation is experienced; but when, in addition, the epithelia become more or less extensively involved by inflammation, and proliferation and inflammation of the interstitial tissue occurs, and with the increased activity of the renal there is polyuria, increased albuminuria, and diminished formation of solids, then it is that the innumerable symptoms of the morbus Brightii are developed. 2. Cirrhoses may exist only in a mild degree, and sometimes only in patches. There are cases in which the organic changes are limited to one kidney. Now, it is under these three conditions, in which the great part of the cures of Bright's disease are brought about. I have no doubt that the new inflammations can usually be controlled; and when this is done the renal symptoms and deviations from health disappear.

Of course I except cases of great structural changes in the kidney. As in all organic diseases, everything depends upon the *amount* of disease.

I have treated many cases of chronic nephritis in which

[1] Sommaire de ce que l'on peut accomplir dans le traitement de la maladie chronique de Bright. Read before the Academy of Medicine of Paris, September 6, 1892.

disturbances of vision, loss of strength and weight, headaches, œdema, nausea, and polyuria, variously existed; the patients that I have so treated have been under my observation for several years, and, so far as renal symptoms are concerned, are in the enjoyment of perfect health. In some of these cases the albuminuria has completely disappeared. A few of these cases I will briefly describe.

About twenty years ago, a young lady, then sixteen years of age, had suffered for about six months from all the conditions of chronic catarrhal nephritis. An absolute cure was effected in six months, and her health has remained, and is now, perfect.

Another case is that of a gentleman who had been incapacitated from work for a year, from chronic interstitial nephritis. There was slight albuminuria, great debility, hard tense pulse, with severe circulatory disturbances of the head. Has enjoyed now perfectly good health for about three years.

A third case is that of a gentleman, aged forty-two, of somewhat scrofulous constitution. First consulted me in 1885. There was chronic interstitial nephritis, and he had been incapacitated for work for three years. There was great debility, considerable cardiac tension, and loss of flesh. Within the last three years he has gained sixteen pounds, is strong and able to attend to business. Albumin is, however, always present, varying from $\frac{1}{10}$ to $\frac{1}{100}$ of one per cent. For two or three years there have been no renal epithelia.

The next patient I will refer to was a lady, who had been suffering from chronic nephritis for more than a year. It followed uræmic convulsions, she having had these in four different confinements. There were abundant casts, kidney epithelia, and from one-tenth to one-twentieth of one per cent. of albumin. For five years now there has not been a trace of albumin, and her health has been perfectly good. The microscope in this case showed more croupous than interstitial nephritis.

A girl, fourteen years of age, suffering from the chronic interstitial nephritis of malarial poisoning, was placed under my care nearly eleven years ago. The malady had been recognized about a year before I saw her. There were severe headaches, subsultus tendinum, threatening convulsions, debility, and always about one-thirtieth of one per cent. of albumin. For eight years now there has been no albumin, and the health has been perfectly good.

I mention these cases as illustrations of what I consider cures in grave conditions of renal cirrhosis or parenchymatous nephritis, and I could mention a considerable number of others.

Undoubtedly, were it possible for me to make now a microscopic examination of the kidneys of these patients, I should find more or less thickened and hardened interstitial tissue, obliteration of a greater or less number of renal tubules, some tubules partially stripped of their epithelia, and others partially obliterated, and perhaps thickening of Bowman's capsule and destruction or atrophy of some of the tufts. But I should expect to find no acute nor subacute inflammatory conditions, and I should find enough healthy epithelia and tufts to separate the urinary salts and aqueous principles in their normal quantity. In a word, the healthy tissue would be so much in excess of that destroyed or useless that the loss of the latter would do no harm.

Thus I have endeavored to give a summary of what may be accomplished in the treatment of chronic nephritis; certainly a much more cheerful summing up than can be given of phthisis and many other grave diseases, and, on the whole, affording much that is cheering in itself.

The ordinary chronic, harmless albuminuria of years' standing, proceeding for instance from the glomeruli without any lesions of the urinary tubules, can seldom, if ever, be cured, and I will go so far as to say that in the majority of cases it matters but little whether it be cured or not.

In chronic croupous nephritis with dropsy, in the large white kidney, or the fatty kidney, the prospects of benefit from treatment are much less than in the mild cirrhotic kidney. My experience in these cases has usually been unsatisfactory, and I believe that the possibilities of what I will continue to call a cure are very small. Nevertheless, I have records of several cases of chronic tubal nephritis of more than a year's standing, with dropsy, which were radically cured, the albumin entirely disappearing. Of course these were not cases of the large white or fatty kidney, but were undoubtedly cases of simple tubal nephritis. There was, in these cases, considerable albuminuria, numerous renal epithelia and casts, mostly granular, many of them having undergone fatty degeneration.

Chronic parenchymatous nephritis I have found more favorable to treatment when it has resulted from paludal poisoning; I have found iron, arsenic, and quinine of great value in these cases.

Another class of cases in which treatment may yield highly satisfactory results is where the nephritis has had a specific origin.

I have given, in the third edition of my work on Bright's disease, the details of what is practically a complete cure of a grave case of chronic interstitial nephritis of syphilitic origin. The patient had been under treatment for nearly two years before he consulted me; he had for several months been incapacitated from attending to business, and suffered from debility, headaches, and dimness of vision; there was considerable œdema of the eyelids; there were at no time casts, and but few renal epithelia. Two or three years of treatment were, however, necessary to bring about a good condition of health. I will say that for many months he took from forty to eighty grains of the iodide of potash daily, besides taking Fowler's solution in large doses and corrosive sublimate, as well as the proto-iodide and ben-iodide of mercury.

I will say no more at present as to what may be expected in the relief or cure of chronic Bright's disease. I am glad that I am able to say so much that is favorable. I am aware that many physicians regard all cases of chronic nephritis as being beyond the pale of relief. But there is no reason why chronic inflammatory conditions of the kidney may not yield to treatment in a like proportion with other chronic inflammatory conditions, as of the lungs, cirrhosis of the liver, etc. Dr. Millard, of Paris, has published an account of three cases of the latter which he has cured.

As to acute Bright's disease, I will only say that it may be placed in the list of curable diseases. There are but few cases that with proper treatment may not be perfectly cured.

But when I say that many cases of chronic nephritis may be cured, it is not to be inferred that a cure is always easy, or to be effected without the expenditure of a great deal of labor and time on the part both of the physician and patient. Circumstances must favor the latter, in enabling him to pursue the treatment uninterruptedly for as long a time as is necessary; if needed, to take rest from work, to avail himself of a course of mineral waters, or a change of climate. Thorough chemical and microscopic examinations of the urine must be frequently made, so as to take advantage of every change in the renal conditions; the diet, selected with care, must be rigorously observed; hot air or vapor baths I consider indispensable. Whenever a new case of much gravity is presented to me, I usually require the patient to keep his bed perhaps for several weeks, and to subsist on a lacteal, or on a slightly nitrogenous, diet. It is necessary to make the patient understand *in limine* the necessity of all this, and that he has before him a long and arduous course of treatment. Unless patients comprehend all these necessities I cannot give them much encouragement, and prefer not to treat them.

It is not the purpose of this paper to refer specifically to the treatment, but I will say that, together with the

measures I have referred to, I have found various mercurial preparations indispensable, and I have used with great value ergotinine, caffeine, strophanthus, digitalis, sparteine, arsenic, various preparations of iron, especially the albuminate and chloride, quinine, the salts of strontium and calcium, nitro-glycerine, iron and arsenical waters of the Trentino, as the Levico and Roncegno, and diuretics. If uric acid exist in excess I neutralize it by Vichy, Vals, or similar waters, and often prescribe for the same purpose Schering's piperazine water with phenocoll. I send patients often to Evian, Vichy, or Royat, and, if the hepatic functions are greatly deranged, to Carlsbad, Marienbad, or Vichy.

I will close by quoting from my own work the following remarks upon treatment :

"There is a harmful disposition on the part of writers, even of known ability, in reviewing the therapeutics of Bright's disease, to speak of the employment of a long list of remedies in this ailment, and of finding them in certain cases useless or the contrary. Practically, their conclusions are to the effect that such and such remedies are 'good' or are not 'good for' or *in* Bright's disease. The mistake that such writers make is in considering this malady an *entity* and treating it as such, instead of realizing its multiple character and the fact that the pathological conditions, the changes, the constitution of the disease, the etiology, are seldom identical in different cases; although it is of course true that there is a certain number and class of remedies without recourse to which treatment would be likely to prove unavailing."

THE BIOLOGICAL CHARACTERS OF THE CHOLERA SPIRILLUM—SPIRILLUM CHOLERÆ ASIATICÆ ("COMMA BACILLUS" OF KOCH)—AND DISINFECTION IN CHOLERA.

By GEORGE M. STERNBERG, M.D.,

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It is now eight years since Koch discovered (1884), in the excreta of cholera patients and in the contents of the intestines of recent cadavers, the pathogenic micro-organism which he first described as a "comma bacillus." Some bacteriologists now speak of this micro-organism as the cholera "vibrio;" but we prefer to follow the nomenclature of Flügge, who describes it under the specific name Spirillum choleræ Asiaticæ; for under certain circumstances it grows out into long spiral filaments, and the so-called "commas" have a spiral twist which may be recognized in drop cultures, especially in the longer elements which in stained preparations present an S shape. When development is rapid the short curved rods and S-shaped spirals only are seen; but in hanging-drop cultures, or in media in which the development is retarded by unfavorable conditions, such as a low temperature or the presence of a small amount of alcohol, long spiral filaments are quite numerous. In old cultures various distorted forms are frequently seen—so-called involution forms. The curved rods have rounded extremities and are about 0.3 to 0.4 μ in diameter. They are actively motile, and are provided with a single terminal flagellum, which may be demonstrated by Löffler's method of staining.

FIG. 1.—Spirillum Choleræ Asiaticæ. (1,000.) From a photomicrograph. (Koch.)

Before speaking of the biological characters of this spirillum it may be well to say a word with reference to its etiological relation to the disease with which it is associated. This is now generally admitted by pathologists. So far as I am informed there has been no failure to find it in the characteristic discharges of cholera patients when these have been collected at an early period of the attack and have been examined by competent bacteriologists. On the other hand, this particular spirillum has never been obtained from the alvine discharges of persons suffering from other diseases or of healthy individuals, although very extended bacteriological examinations of such material have been made since its discovery. Among these I may mention the researches of Finkler and Prior,[1] of Weisser,[2] of Escherich,[3] of Booker,[4] of Jeffries,[5] and my own [6] extended study of the dejecta of yellow-fever patients, and of healthy persons, for comparison. Many bacteriologists have also made examinations of the excreta of typhoid-fever patients, and of well and river water from various sources, but no one has encountered a spirillum which is identical with the "comma bacillus" of Koch. It is true that two closely allied micro-organisms have been found; one, the spirillum of Finkler and Prior, found in the dejecta of certain cases of cholera nostras, and the other the spirillum of Deneke, obtained in 1885 from a piece of old cheese; but both of these have been shown to present constant characters by which they may be differentiated from Spirillum choleræ Asiaticæ.

It is but fair to state that Cunningham,[7] as a result of recent (1891) researches made in Calcutta, states that he has failed to find comma bacilli in undoubted cases of cholera, and that in certain cases in which they were present he was able to differentiate several varieties.

With reference to the experimental evidence of the pathogenic power of this spirillum I must refer you to the extended literature of the subject. That recent cultures are pathogenic for certain of the lower animals, and especially for guinea-pigs, has been amply demonstrated by the experiments of Koch and others.

It has also been ascertained that cultures recently obtained from the dejecta of cholera patients are more pathogenic than those which have been carried through a long series of cultivations in the usual artificial media.

Brieger has succeeded in isolating several toxic ptomaines from cultures of the cholera bacillus, some of which had previously been obtained from other sources—cadaverin, putrescin, creatinin, methyl-guanidin. In addition to these he obtained two toxic substances not previously known. One of these is a diamin, resembling trimethylenediamin; it gave rise to cramps and muscular tremor in inoculated animals. The other poison reduced the frequency of the heart's action and the temperature of the body in the animals subjected to experiment. In more recent researches made by Brieger and Fränkel [8] (1890) a toxalbumin was obtained from cholera cultures, which, when injected subcutaneously into guinea-pigs, caused their death in two or three days, but had no effect on rabbits.

Pfeiffer [9] has recently (1892) published his extended researches relating to the cholera poison. He finds that recent aërobic cultures of the cholera spirillum contain a specific toxic substance which is fatal to guinea-pigs in extremely small doses. This substance stands in close relation with the bacterial cells and is perhaps an integral

[1] Finkler u. Prior: Unters. über Cholera nostras, Deutsche Med. Woch., 1884, No. 36.

[2] Weisser: Ueber die Emmerich'schen sog. Neapler Cholera-bacterien, Zeitschr. f. Hygiene, Bd. i., 1886, p. 315.

[3] Escherich: Die Darmbakterien des Säuglings. Stuttgart, 1886.

[4] Booker: A Study of Some of the Bacteria found in the Dejecta of Infants Afflicted with Summer Diarrhœa. Transactions of the Ninth International Medical Congress, vol. iii.

[5] Jeffries: The Bacteria of the Alimentary Canal, Especially in the Diarrhœa of Infancy, Boston Medical and Surgical Journal, 1888, September 6.

[6] Sternberg: Report on the Etiology and Prevention of Yellow Fever, p. 115. Washington. 1890.

[7] Cunningham: On Some Species of Choleraic Comma Bacilli Occurring in Calcutta. The Scientific Memoirs by the Medical Officers of the Army of India. Part VI. Calcutta. 1891.

[8] Brieger und Fränkel: Untersuchungen über Bakteriengifte, Berl. klin. Wochenschr., 1890, Nos. 11 and 12.

[9] Pfeiffer: Untersuchungen über das Choleragift, Zeitschr. für Hygiene, Bd. xi. 1892, f. 393.

part of the same. The spirilla may be killed by chloroform, thymol, or by desiccation, without apparent injury to the toxic potency of this substance. It is destroyed, however, by absolute alcohol, by concentrated solutions of neutral salts, and by the boiling temperature, and secondary toxic products are formed which have a similar physiological action, but are from ten to twenty times less potent. Similar toxic substances were obtained by Pfeiffer from cultures of Finkler-Prior's spirillum, and from Spirillum Metschnikovi.

The spirillum is not found in the blood or in the various organs of individuals who have succumbed to an attack of cholera; but it is constantly found in the alvine discharges during life and in the contents of the intestine examined immediately after death; frequently in almost a pure culture in the colorless "rice-water" discharges. It is evident, therefore, that if we accept it as the etiological agent in the disease, the morbid phenomena must be ascribed to the absorption of toxic substances formed during its multiplication in the intestine. In cases which terminated fatally after a very brief sickness Koch found but slight changes in the mucous membrane of the intestine, which was slightly swollen and reddened; but in more protracted cases the follicles and Peyer's patches were reddened around their margins, and an invasion of the mucous membrane by the "comma bacilli" was observed in properly stained sections. They penetrated especially the follicles of Lieberkühn, and in some cases were seen between the epithelium and basement membrane. As a rule, the spirillum is not present in vomited matters, but Koch found it in small numbers in two cases, and Nicati and Rietsch in three. In about one hundred cases in which Koch examined the excreta or the contents of the intestine of recent cadavers, during his stay in Egypt, in India, and in Toulon, his "comma bacillus" was constantly found, and other observers have fully confirmed him in this particular.

The most satisfactory evidence that this spirillum is able to produce cholera in man is afforded by an accidental infection which occurred in Berlin (1884) in the case of a young man who was one of the attendants at the Imperial Board of Health, when cholera cultures were being made for the instruction of students. Through some neglect the spirillum appears to have been introduced into his intestine, for he suffered a typical attack of cholera, attended by thirst, frequent watery discharges, cramps in the extremities, and partial suppression of urine. Fortunately he recovered, but the genuine nature of the attack was shown by the symptoms, and by the abundant presence of the "comma bacillus" in the colorless, watery discharges from the bowels.

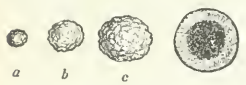

FIG. 2.—Colonies of the cholera spirillum. *a*, End of twenty hours; *b*, end of thirty hours; *c*, end of forty-eight hours; *d*, after liquefaction of the gelatin. (Flügge.)

I shall not detain you with an account of the characters of growth in various culture media which enable bacteriologists to recognize this particular spirillum, but will call your attention more particularly to those biological characters which are of interest from a practical point of view, as furnishing a scientific basis for measures of prophylaxis, disinfection, etc.

The cholera spirillum grows readily in a variety of organic media, either in the presence or in the absence of oxygen. In other words, it is an aërobic and facultative anaërobic spirillum.

In bouillon the development is rapid and abundant, especially in the incubating oven; the fluid is only slightly clouded, but the spirilla accumulate at the surface, forming a wrinkled membranous layer. Sterilized milk is also a favorable culture medium. In general this spirillum grows in any liquid containing a small quantity of organic pabulum and having a slightly alkaline reaction. An acid reaction of the culture medium prevents its development, as a rule, but it has the power of gradually accommodating itself to the presence of vegetable acids, and grows upon potatoes—in the incubator only—which have a slightly acid reaction. Abundant development occurs in bouillon which has been diluted with eight or ten parts of water, and the experiments of Wolffhügel and Riedel show that it also multiplies to some extent in sterilized river and well water, and that it preserves its vitality in such water for several months. According to Kinyoun it may preserve its vitality in sterilized sea-water, taken from New York Bay, for a considerable time, but not for a longer period than sixty days.

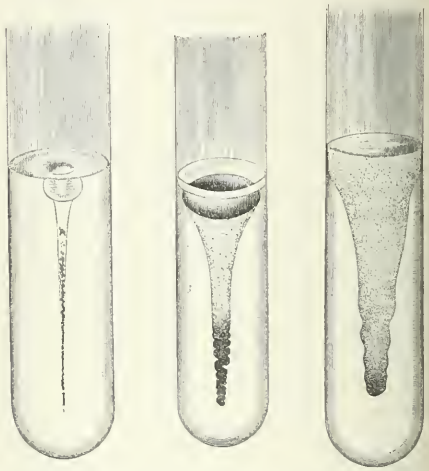

FIG. 3.—Cultures in Nutrient Gelatin at the Room Temperature (16° to 18° C.) at the Commencement of the Fourth Day. *a*, Spirillum cholerae Asiaticæ; *b*, Spirillum tyrogenum; *c*, Spirillum of Finkler and Prior. (Baumgarten.)

In an extended experimental research made by De Giaxa[1] (1889), it was found that in sterilized sea-water the cholera spirillum multiplied abundantly for a time, and retained its vitality for a considerable period; but in non-sterilized sea-water it died out within two or three days, the rapidity with which it disappeared depending upon the number of common saprophytes in the water. It has also been found that it dies out within a few days in milk or in river water, which contains numerous saprophytic bacteria.

Gruber and Schottelius have shown that in bouillon which is greatly diluted the cholera spirilla may take the precedence of the common saprophytic bacteria, and that they form upon the surface of such a medium the characteristic wrinkled film. Koch found in his early investigations that rapid multiplication may occur upon the surface of moist linen, and also demonstrated the presence of this spirillum in the foul water of a "tank" in India, which was used by the natives for drinking purposes. In the experiments of Bolton (1886) the cholera spirillum was found to multiply abundantly in distilled water to which bouillon was added in the proportion of fifteen to twenty-five parts in one thousand.

The thermal death-point of the cholera spirillum in recent cultures in flesh-peptone-gelatin, as determined by the writer[2] (1887), is 52° C., the time of exposure being four minutes; a few colonies only developed after exposure of a temperature of 50° C. for ten minutes. In Kitasato's experiments (1889) ten or even fifteen minutes' exposure to a temperature of 55° C. was not always successful in destroying the vitality of the spirillum, although

[1] De Giaxa: Ueber das Verhalten einiger pathogener Mikroorganismen im Meerwasser. Zeitschr. fur Hygiene, Bd. vi., 1889, p. 162.

[2] Sternberg: The Thermal Death-point of Pathogenic Organisms. American Journal of the Medical Sciences, Philadelphia, xciv., 1887, p. 146.

in certain cultures exposure to 50° C. for fifteen minutes was successful. He was not, however, able to find any difference between old and recent cultures as regards resistance to heat or to desiccation. In a moist condition this spirillum retains its vitality for months—as much as nine months in agar and about two months in liquefied gelatin. It is quickly destroyed by desiccation, as first determined by Koch, who found that it did not grow after two or three hours when dried in a thin film on a glass cover. In Kitasato's[1] experiments (1889) the duration of vitality was found to vary from a few hours to thirteen days, the difference depending largely upon the thickness of the film. When dried upon silk threads they may retain their vitality for a considerably longer time (Kitasato). Very numerous experiments have been made to determine the amount of various disinfecting agents required to destroy the vitality of this micro-organism. We give below the results recently reported by Boer[2] (1890), whose experiments were made in Koch's laboratory. Experiments upon a culture in bouillon kept for twenty-four hours in the incubating oven, time of exposure, two hours: Hydrocyanic acid, 1 to 1,350; sulphuric acid, 1 to 1,300; caustic soda, 1 to 150; ammonia, 1 to 350; mercuric cyanide, 1 to 60,000; gold and sodium chloride, 1 to 1,000; silver nitrate, 1 to 4,000; arseniate of soda, 1 to 400; malachite green, 1 to 5,000; methyl violet, 1 to 1,000; carbolic acid, 1 to 400; creolin, 1 to 3,000; lysol, 1 to 500. In Bolton's experiments (1887) mercuric chloride was effective in two hours in the proportion of 1 to 10,000; sulphate of copper, 1 to 500.

The low thermal death-point and comparatively slight resisting power for desiccation and chemical agents indicate that this spirillum does not form spores, and most bacteriologists agree that this is the case. Hueppe, however, has described a mode of spore formation which is different from that which occurs among the bacilli, viz., the formation of so-called arthrospores; these are said to be developed in the course of the spiral threads, not as endogenous refractive spores, but as spherical bodies which have a somewhat greater diameter than the filament and are somewhat more refractive. This mode of spore formation has not been observed by Kitasato and other bacteriologists who have given attention to the question, and cannot be considered as established. In competition with the ordinary putrefactive bacteria the cholera spirillum soon disappears, and, as determined by Neffelman and by Kitasato, they only survive for a few days when mixed with normal fæces.

The cholera spirillum grows best at a temperature of 30° to 35° C., and ceases to grow at a temperature above 42° C., or below 14° C. Like other micro-organisms of this class, it is not destroyed by a freezing temperature.

The experimental data already referred to indicate heat, strong mineral acids, carbolic acid, and certain other agents named as being available for the destruction of the cholera spirillum, wherever it may be found outside of the bodies of infected individuals. The question as to what agents it is best to recommend for general use as practical disinfectants will, of course, depend upon certain facts relating to cost, poisonous properties, odor, action upon metals, etc.

After considering all of these circumstances, the Committee on Disinfectants[3] of the International Sanitary Conference of Rome selected carbolic acid and chloride of lime as the most available and reliable chemical disinfectants, and gave the following directions for their use:

Disinfection.—5. The commission recommends, as a means of disinfection against cholera, besides destruction: 1, Steam at 100° C.; 2, carbolic acid, chloride of lime; 3, aëration.

Carbolic acid and chloride of lime are to be used in aqueous solution:

Weak Solutions: Carbolic acid, two per cent.; chloride of lime, one per cent.

Strong Solutions: Carbolic acid, five per cent.; chloride of lime, four per cent.

These means of disinfection will be applied as follows:

I. For the disinfection of persons, the weak solutions should be employed.

II. For the disinfection of clothing, bedding (*des linges, aes habits, des couvertures*), and other articles of this kind: *a*, destruction; *b*, steam passed through the articles for one hour; *c*, boiling for thirty minutes; *d*, immersion for twenty-four hours in one of the weak disinfecting solutions; *e*, aëration for three or four weeks, but only in case the other means recommended are inapplicable.

Articles of leather, such as trunks, boots, etc., should be either destroyed, or washed several times with one of the weak disinfecting solutions.

III. Vomited matters and the dejections of the sick should be mixed with one of the strong disinfection solutions, in quantity at least equal to the amount of material to be disinfected. Linen, clothing, bedding, etc., recently soiled by the dejections of the sick, which cannot be immediately subjected to the action of steam, should be at once immersed in one of the strong disinfecting solutions, and left for four hours.

IV. The dead should be enveloped in a sheet, saturated with one of the strong disinfecting solutions, without previous washing of the body, and at once placed in a coffin.

V. Disinfection of merchandise, and of the mails is unnecessary (steam under pressure is the only reliable agent for the disinfection of rags—*les chiffons en gros*).

VI. When cases of cholera occur upon a vessel at sea, the locality where the case occurs should be disinfected. The floors and walls of the cabin, or other locality, should be washed at least twice with one of the weak disinfecting solutions, and then exposed freely to fresh air.

In the case of objects of considerable value, which have not been in immediate contact with the sick, and which would be seriously injured by a rigorous disinfection, the physician on board may determine what measures are necessary to protect the sanitary interests of the vessel.

The bilge-water should be pumped out, and replaced by sea-water, at least twice at each disinfection of a vessel.

The closets should be well washed with one of the strong disinfecting solutions, at least twice a day.

VII. If the drinking-water is open to suspicion, it should be boiled before it is used, and the boiling should be repeated if it is not used within twenty-four hours.

All suspected food should be destroyed, or at least recently cooked.

VIII. Hospitals should be disinfected by washing the floors and walls with one of the weak disinfecting solutions, by a subsequent free ventilation and cleansing, and finally by repainting. The wards to be disinfected should, as far as possible, be isolated from those in use.

The latrines should be disinfected at least twice a day, by pouring into them the strong disinfecting solutions in quantity at least equal to the amount of the dejections received since the last disinfection.

IX. The clothing worn by physicians and attendants should remain in the hospital, and should be regularly disinfected.

Physicians and attendants should use the weak disinfecting solutions for washing their hands, etc.

Carbolic Acid possesses the advantage of not being neutralized by the substances found in excreta, or by the presence of albumin. In experiments made by Bolton under my direction (1885) it was found that the addition of ten per cent. of dried egg albumin to a bouillon cult-

[1] Kitasato: Die Widerstandsfähigkeiten der Cholerabakterien gegen das Eintrocknen und gegen Hitze. Zeitschr., für Hygiene, Bd. v., 1889, p. 134.

[2] Boer: Ueber die Leistungsfähigkeit mehrerer Chemischer Desinfektionsmittel bei einigen für den menschen Pathogenen Bakterien, Zeitschr. für Hygiene, Bd. ix., 1890, p. 479.

[3] This committee consisted of Koch, of Germany; Sternberg, of the United States; Proust, of France; Thorne Thorne, of England; Eck, of Russia; Hoffmann, of Austria; and Semmola, of Italy. The report of the committee was adopted unanimously by the Conference.

ure of the typhoid bacillus did not materially influence the disinfecting power of this agent, the bacillus being destroyed in two hours by a one per cent. solution. The experimental evidence therefore fully justifies the recommendations of the Committee on Disinfectants of the International Sanitary Conference of Rome, and of the health officials of Europe and America, which direct the use of a five per cent. solution of carbolic acid for the disinfection of dejecta, and of a two per cent. solution for soiled linen and other clothing which can be immersed in a disinfecting solution without injury.

I know of no objection to the use of this agent as directed except its comparative cost.

Chloride of Lime which is placed beside carbolic acid in the recommendations adopted by the International Conference of Rome, is considerably cheaper and equally effective. The Committee on Disinfectants of the American Public Health Association (1887) gave it "the first place for disinfecting excreta, on account of the rapidity of its action." This recommendation was based upon experimental data obtained in the Biological Laboratory of the Johns Hopkins University, under the writer's direction, and is sustained by more recent experiments made in Germany.

The experiments of Bolton,[1] made for the Committee on Disinfectants in 1886, gave the following results: The time of exposure being two hours, the typhoid bacillus and cholera spirillum in bouillon cultures were killed by a solution containing 1 to 1,000 parts of water (containing 0.03 per cent. of available chlorine). Anthrax spores were killed in the same time by a solution containing 0.3 per cent. of available chlorine. Typhoid fæces were sterilized by a two per cent. solution, and in several instances by a one-half per cent. solution; but some resistant spores of non-pathogenic bacilli survived in two experiments in which a solution of 1 to 100 was used. In bouillon cultures to which ten per cent. of dried egg albumin had been added the typhoid bacillus was destroyed by one-half per cent. (1 to 200).

Nissen,[2] whose experiments where made in Koch's laboratory in 1890, found that anthrax spores were destroyed in thirty minutes by a five per cent. solution, and in seventy minutes by a one per cent. solution. In his experiments the typhoid bacillus and the cholera spirillum were destroyed with certainty in five minutes by a solution containing 0.12 per cent. (1 to 833); the anthrax bacillus in one minute by 1 to 1,000; staphylococcus pyogenes aureus in one minute by 1 to 500.

Experiments made by the same author on the sterilization of fæces showed that one per cent. could be relied upon to destroy the bacillus of typhoid fever and the spirillum of cholera in fæces in ten minutes.

Another agent of great value for the disinfection of excreta is recently-burned quick-lime. Experiments made in Koch's laboratory in 1887, by Liborius, led him to place a high value upon this agent as a disinfectant. More recent experiments by Jaeger, Kitasato, Pfuhl, and others, have shown that caustic lime has considerable germicidal power in the absence of spores, and that the value which has long been placed upon it for the treatment of excrementitious material in latrines, etc., and as a wash for exposed surfaces is justified by the results of exact experiments made upon known pathogenic bacteria. The germicidal power of lime is not interfered with by the presence of albuminous material, but is neutralized by phosphates, carbonates, and other bases, and by carbonic acid.

In the writer's experiments a saturated aqueous solution of calcium oxide failed to kill typhoid bacilli; but when suspended in water in the proportion of one to forty by weight, this bacillus was killed at the end of two hours. Anthrax spores were not killed in the same time by a lime wash containing twenty per cent. by weight of pure calcium oxide. According to Kitasato the typhoid bacillus and the cholera spirillum in bouillon cultures are destroyed by the addition of 0.1 per cent. of calcium oxide. Pfuhl experimented upon sterilized fæces, to which pure cultures of the typhoid bacillus or cholera spirillum were added. The liquid discharges of patients with typhoid fever or diarrhœa were used for the purpose. He found that sterilization was effected at the end of two hours by adding fragments of calcium hydrate in the proportion of six per cent., and that three per cent. was effective in six hours. When a milk of lime was used which could be thoroughly mixed with the dejecta, the result was still more favorable. A standard preparation of milk of lime containing twenty per cent. of calcium hydrate killed the typhoid bacillus and the cholera spirillum in one hour, when added to liquid fæces in the proportion of two per cent.

The experiments with this agent show that time is an important factor and that much longer exposures, as well as stronger solutions, are required to destroy pathogenic bacteria than is the case with the chloride of lime. For this reason we still give the last named agent the preference for the disinfection of excreta in the sick room. But in latrines the time required to accomplish disinfection is of less importance, and we are disposed to give recently-burned quick-lime the first place for the disinfection of excreta in privy vaults, or on the surface of the ground. It may be applied in the form of milk of lime, prepared by adding gradually eight parts, by weight, of water to one part of calcium hydrate. This must be freshly prepared, or protected from the air to prevent the formation of the inactive carbonate of lime.

According to Behring, lime has about the same germicidal value as the other caustic alkalies, and destroys the cholera spirillum and the bacillus of typhoid fever, of diphtheria, and of glanders, after several hours' exposure, in the proportion of 50 c.c. normal-lauge per litre. Wood ashes or lye of the same alkaline strength may therefore be substituted for quick-lime.

The recommendations of the Committee on Disinfectants of the International Sanitary Conference of Rome made no reference to the use of a germicidal agent of great value which has been largely used in this country, viz., to mercuric chloride. One reason for the omission was that the two chemical agents named were considered sufficient and satisfactory disinfectants, so far as cholera is concerned, and another reason was that certain members of the committee hesitated to recommend this agent for general use on account of its poisonous properties. So far as I know no accidents have resulted from its extended use in this country, in accordance with the recommendations of the Committee on Disinfectants of the American Public Health Association; and as a disinfecting wash for surfaces, etc, there can be no doubt of its value. The recommendations of the Committee last referred to are as follows:

For Clothing, Bedding, etc.—*a.* Soiled underclothing, linen, etc.: 1, Destruction by fire, if of little value; 2, boiling for at least half an hour; 3, immersion in a solution of mercuric chloride of the strength of 1 to 2,000 for four hours; 4, immersion in a two per cent. solution of carbolic acid for four hours.

b. Outer garments of wool or silk, and similar articles which would be injured by immersion in boiling water, or in a disinfecting solution: 1, Exposure in a suitable apparatus to a current of steam for ten minutes; 2, exposure to dry heat at a temperature of 110° C. (230° F.) for two hours.

c. Mattresses and blankets soiled by the discharges of the sick: 1, Destruction by fire; 2, exposure to superheated steam, 105° C. (221° F.) for ten minutes; 3, immersion in boiling water for half an hour.

Furniture, and Articles of Wood, Leather, and Porcelain.—Washing, several times repeated, with 1, solution of carbolic acid, two per cent.

For the Person.—The hands and general surface of

[1] Bolton: Report of Committee on Disinfectants, American Public Health Association, 1887, p. 153.

[2] Nissen: Ueber die Desinficirende Eigenschaft des Chlorkalkes. Zeitschrift für Hygiene, Bd. viii., p. 63.

the body of attendants on the sick, and of convalescents, should be washed with: 1, Solution of chlorinated soda diluted with nine parts of water, 1 to 10; 2, carbolic acid, two per cent. solution; 3, mercuric chloride, 1 to 1,000.

For the Dead.—Envelop the body in a sheet thoroughly saturated with: 1, chloride of lime, four per cent; 2, mercuric chloride in solution, 1 to 500; 3, carbolic acid in solution, five per cent.

For the Sick-room and Hospital Wards.—*a.* While occupied, wash all surfaces: 1, mercuric chloride in solution, 1 to 1,000; 2, carbolic acid in solution, two per cent.

b. When vacated, fumigate with sulphur dioxide for twelve hours, burning at least three pounds of sulphur for every one thousand cubic feet of air-space in the room; then wash all surfaces with one of the above-mentioned disinfecting solutions, and afterward with soap and hot water; finally throw open doors and windows, and ventilate freely.

For Merchandise and the Mails.—The disinfection of merchandise and of the mails will only be required under exceptional circumstances; free aëration will usually be sufficient. If disinfection seems necessary, fumigation with sulphur dioxide will be the only practical method of accomplishing it without injury.

Rags.—*a.* Rags which have been used for wiping away infectious discharges should be burned.

b. Rags collected for the paper-makers during the prevalence of an epidemic should be disinfected before they are compressed in bales by: 1, exposure to superheated steam of 105° C. (221° F.) for ten minutes: 2, immersion in boiling water for half an hour.

Ships.—*a.* Infected ships at sea should be washed in every accessible place, and especially in the localities occupied by the sick, with: 1, solution of mercuric chloride, 1 to 1,000: 2, solution of carbolic acid, two per cent.

The bilge should be disinfected by the liberal use of a strong solution of mercuric chloride.

b. Upon arrival at a quarantine station, an infected ship should at once be fumigated with sulphurous acid gas, using three pounds of sulphur for every one thousand feet of cubic air-space; the cargo should then be discharged on lighters; a liberal supply of the concentrated solution of mercuric chloride (four ounces to the gallon) should be thrown into the bilge, and at the end of twenty-four hours the bilge-water should be pumped out and replaced with pure sea-water: this should be repeated. A second fumigation, after the removal of the cargo, is recommended; all accessible surfaces should be washed with one of the disinfecting solutions heretofore recommended, and subsequently with soap and hot water.

For Railway Cars.—The directions given for the disinfection of dwellings, hospital wards, and ships apply as well to infected railway cars. The treatment of excreta with a disinfectant, before they are scattered along the tracts, seems desirable at all times, in view of the fact that they may contain infectious germs. For this purpose the standard solution of chloride of lime is recommended.

Exhibit of Anthropology.—Professor F. W. Putnam, of Cambridge, Mass., is superintendent of a large exhibit of anthropology at the coming World's Fair in Chicago. The department is to occupy the northern half of the gallery of the main building, and also a strip of land along the lagoon, where groups of native American people will be quartered in their natural habitations. There will be a representative exhibit of the remains of historic man in America, and large models of the most noteworthy of their works, such as the Serpent Mound and Fort Ancient. Central America will be well represented. Along with this there will be an exhibition of primitive industries, customs, and the like.—*Chicago Medical Recorder.*

THE PROPAGATION AND PRESERVATION OF VACCINE VIRUS.

By CYRUS EDSON, M.D.,

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In January last small-pox made its appearance in New York City, after an absence of about five years. In fact, no serious outbreak of the disease has occurred since that of 1881–82. During the past six months sporadic cases of the disease have occurred almost daily. Notwithstanding the hot weather, which usually, by compelling people to open their doors and windows, thereby securing ventilation, is a powerful factor in stopping its spread, the disease is not yet stamped out. The persistence of this outbreak would lead one to believe that, during the coming winter, a large number of cases may be expected. Apropos of this, I have thought it interesting to inform the profession concerning the means taken to propagate vaccine virus in several of the principal countries of the civilized world. I do not know of any recent attempt to collate and describe the different methods in vogue in the different countries, except that made by Dr. John Brett, the Public Vaccinator of Melbourne, Australia. This gentleman I had the honor of conducting through the Health Department laboratory in this city, and of describing to him the means taken to propagate vaccine virus here. He was at the time on a tour of the world for the purpose in question, and he kindly promised to forward to me the result of his labors when they were completed. I have just received his interesting report, from which I will draw largely in the preparation of this article.

England.—The calf-lymph establishment is under the control of the Local Government Board, and has been since it was founded in 1881. The premises occupied by it consist of a large waiting-room, divided by a partition into two parts, one of which is for vaccinating children, the other for operating on calves. Behind these are the stables, fitted with brick floors, hot and cold water, and other conveniences. Everything is kept with scrupulous cleanliness. The calves range in age from six to twelve months. Their care is supervised by a veterinary surgeon, who examines them before and after inoculation. Specially designed tables are in use to which they are strapped while being inoculated and on taking of the lymph. The strain of lymph now in use is the same as that obtained in March, 1882, from a case of spontaneous cow-pox discovered on November 25, 1881, near Bordeaux, France. This strain has never been renewed, although at times considerable trouble has been experienced with it on calves. Fresh lymph is almost invariably used for inoculations, though occasionally stored lymph has to be resorted to. The inoculations are always made by means of incisions carried deeply through the skin, and not by superficial scarifications. The lymph is taken from the ninety sixth to the one hundred and twentieth hour. The vesicle is compressed by means of specially constructed forceps, the crust having been removed and discarded. For immediate vaccination, the vesicle is scraped with a blunt scalpel, and the pulp thus removed, mixed as it is with blood, epithelium, and connective-tissue cells, is used on the child. The admixture with blood is not considered detrimental in any way; indeed, it is maintained by Dr. Cory, the superintendent, that colorless lymph is rarely to be depended on. Lymph stored on points and in tubes is also contaminated with blood and connective-tissue cells. Tubes are not, as a rule, used to any extent. The stored lymph is principally used on ivory points. The animals are inoculated along the inner aspect of the thigh and on the abdomen back of the udder or scrotum. In England, more than in any other country, humanized virus is used. This is usually collected from children whose antecedents are traced as carefully as possible, and stored either in capillary tubes or on ivory points. Experience has taught us that vaccination by means of humanized virus results in a less active

sore, and protects for a longer period. The objections to its use, however, are obvious.

Belgium.—A very wide difference exists between England and Belgium in respect to the propagation, collection, and keeping vaccine virus. The calf-lymph establishment is under the control of the Minister of the Interior, who is the official head of the Department of Hygiene. The vaccine laboratory, established in 1882 at the School of Veterinary Medecine, is in one of the suburbs of Brussels, and produces a virus at the expense of the state. The virus is distributed to all public vaccinators and to medical men who demand it. The calves are from three to four months old, and should not weigh less than one hundred kilogrammes. They are carefully fed exclusively on fresh milk, and are examined previous and subsequent to their inoculation by a veterinarian. Immediately after the lymph is taken they are killed, and if the organs are found healthy the lymph is used and the calves sold as veal. The animals are inoculated over the inguinal region, which is shaved and deeply scarified. The scarifications are made with a sharp lancet in rows of five, the incisions being one and a half inch apart. The incisions being wiped free from blood, prepared glycerine pulp, hereafter described, is inserted, or else a freshly taken pulp. On the sixth, and sometimes on the fifth day, the vesicles are found sufficiently developed, showing all around them a yellowish-brown crust, with a silvery-white zone surrounded by a slight pinkish areola. The calf is placed on a table, the parts well but gently washed with warm water, and each vesicle is clamped at its base with specially devised forceps. The crust is then removed, the exuding blood wiped away, and the soft grayish pulp scraped and placed in a porcelain cup. This pulp is used to make the following preparations: (*a*) glycerine pulp; (*b*) glycerole pulp; (*c*) liquid vaccine; (*d*) dried vaccine powder. Glycerine pulp, referred to as being used to inoculate the calves, is made as follows: the pulp is placed in a mortar, thoroughly divided and triturated until it is a homogeneous mass. It is then mixed with one-third or one-half its amount of C. P. glycerine. After being thoroughly mixed it acquires a syrupy consistency, and will preserve its activity for many weeks or even for months. It is this glycerine pulp that is used to propagate the strain in the animals. Glycerole pulp is similarly prepared, except that the raw pulp is mixed with equal parts of glycerite of starch. This pulp is preserved when prepared, either between two square pieces of glass, one of which has a small circular depression in which the pulp is placed, or in small test-tubes sealed with paraffine. Each glass square contains sufficient virus to vaccinate from two to four persons, and each vial, according to its size, contains sufficient to vaccinate from ten to one hundred. Liquid vaccine is made by taking any fluid lymph which may exude after the scraping of the vesicle, and mixing it with a small quantity of the pulp and some glycerine. This is then filtered and introduced into capillary tubes. This liquid lymph is also preserved on ivory points, which are, after being charged, thoroughly dried and then coated with gum arabic. Dried vaccine powder is prepared by placing the fresh vaccine pulp in a vacuum, by which means in twenty-four hours or so it is reduced to a fine powder. This is preserved in small cardboard boxes. The experience of physicians in Belgium has taught that the pulp glycerole contained between two pieces of glass is the most reliable virus. The lymph preserved in tubes or on points has, in consequence, fallen into disuse and is seldom asked for. The Belgian method may be taken as a good exponent of the method in vogue in France and Italy. In Germany the animal is inoculated with a glycerine compound of virus, and on about the fifth day the virus is taken as follows: The animal is placed on a table and its head nearly severed from its body by a rapid stroke. When exsanguination is complete the vesicle is carefully cleansed and entirely excised, the excision being carried deep down into the connective tissue. The mass is reduced to a pulp and then mixed with glycerine or glycerite of starch, as already described in the Belgian method. Admixture with blood is severely condemned.

In Paris the popular means of vaccinating, for those who can afford it, is directly from the animal to the child. For this purpose the calf is taken to the house, a rubber cloth is spread in one of the rooms, a vesicle is tapped, and the child is vaccinated on the spot with the exudation from it. This method is characteristically Frenchy, as the hoofs of the animal are carefully polished, it is decorated with ribbons, and a silver shovel goes with it to catch the dung, if necessary.

The method in New York is in some respects unique. Animals a year to two years old are used. When possible, these are splayed heifers, as it has been found that the hides of such are thinner and develop a better pock. The animals are vaccinated on either side of the backbone, commencing at a point about two inches from the root of the tail, running along the back toward the hip bones. Four to six inoculations are made at about two inches apart. Scarifications are made with a peculiarly shaped lancet, having six or eight blades about one-eighth of an inch apart. On the fifth to the sixth day the virus is taken. The crust is discarded, and the serum, as it naturally exudes from the sore, collected on quill slips. Slight admixture with blood is not considered undesirable, but the slips for the most part are quite free from any such admixture. Occasionally capillary tubes are used, and there is some demand for them. The object of using the region on each side of the back bone is for the purpose of cleanliness, as that part of the animal is least liable to be soiled by lying down in dung and other filth. We have found virus from young adult animals more active and more certain in its results than that from calves.

The heifers are carefully examined by the department veterinarian before vaccination, and daily afterward. When the virus has been collected and the animal has regained a healthy condition, it is killed, all the internal organs examined, and if they are found to be free from disease the meat is sold, and the virus tested, *i.e.*, from six to ten primary vaccinations are performed with it to ascertain if it is active. If the test results favorably the virus is used, if not it is discarded. The excellence of New York City Health Department virus is largely due to the ability, zeal, and labor of Dr. Edward L. Pardee, in whose charge the vaccine laboratory is.

The amount of virus produced in 1891 was as follows:

The number of animals vaccinated was	148
Quill slips prepared	192,200
Ivory points prepared	17,650
Capillary glass tubes filled	595

The cost to the city of free vaccination has, during the past six years, been greatly reduced. The following table shows, per vaccination, this reduction by years:

	Cents.		Cents.
1886	34	1889	22
1887	25	1890	17
1888	21	1891	12

An Alleged Sign of Still-birth.—Dr. A. C. Moreno, writing in the *Boletin Médico de Puebla* for August, 1892, calls attention to a means of determining whether a dead infant has breathed or not, which he claims is infallible. The ciliated cylindrical epithelium of the respiratory tract extends down to the terminal bronchioles, where, he says, it becomes cubical. In an infant which has never breathed this epithelium will be found to exist, but the minute respiration begins, this is transformed into flat epithelium. The change is not a mechanical one, the author holds, but a physiological one. Hence it would be possible to determine by means of the microscope, whether an infant, whose lungs contained air, had drawn the air in by inspiration, or whether it had been forced in during an attempt at artificial respiration.

CHANCRE OF THE MOUTH.

With Statistics and a Report of Twelve Cases, Three Occurring in Children in One Family.

By E. HARRISON GRIFFIN, M.D.,

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In looking over the histories of 1,200 cases of syphilis that have come under my observation in the Bellevue clinic and in my private practice, I find the report of 12 cases where the primary chancre was situated in the region of the buccal cavity. Of these 1,200 cases 29 were specific inflammation, 488 mucous patches, 155 superficial ulcerations, 159 deep ulcerations, 34 necrosis of the bones, 30 adhesion of the palate to the pharynx, 3 tertiary cicatrices of the pharynx, 2 mercurial stomatitis, 1 chancroid of lips, 65 laryngeal syphilis, and 222 that I will classify simply as cases of syphilis of the throat. Of these cases 762 were males and 438 females.

I found 3 under the age of ten.

Between	10 and 20	there were	144
"	20 " 30	"	555
"	30 " 40	"	297
"	40 " 50	"	148
"	50 " 60	"	49
	Over 60	"	3
	" 70	"	1

The secondary and tertiary manifestations of syphilis occurring in the throat are so common and so easily recognized by the experienced physician that I will pass them over and give the histories of the primary lesions that have occurred in my practice.

Professor Bosworth kindly showed me the chapter in his new book, which is now in print, in which he has collected some very interesting histories of the primary lesion situated in the buccal cavity. Bosworth finds that Bogolguboff out of 753 cases of chancre found the primary lesion upon the tonsil in 1 case; Mauriac the primary lesion in the [locality in 2 cases. Schadek collected 68 cases of the initial lesion occurring in the fauces. Of these 68, however, in 22 the histories are so incomplete that a diagnosis is open to question; of the 46 remaining, in 34 the lesion was located upon the tonsil, and in 12 in other parts of the fauces. Petersen, Schirajeu, Gonduoin, Hulot, Spillman, Wiggleswoith, Rollet, Desnos, Belhomme and Martin, Julien, Mackenzie, Bartholomy, Merklen, Boeck, Lavallée, Hal. Legendre, Brocq, Bumstead, Peradran, Donaldson, Taylor, Thomaschewsky, Fox, Rabitsch, and Tschistjakow all report cases of the initial lesion occurring in the region of the mouth. The reports of these cases are given in full in Bosworth's new book.

The first cases I will cite are cases that have come under my observation lately. They are particularly interesting as they occurred in children, and all members of the same family.

Case I.—Male, aged nine, was brought to me April 9, 1892. He was accompanied by his father, who brought him, as he thought he was suffering from the mumps. An examination showed the submaxillary and cervical glands of the right side enlarged to the size of a bantam's egg, they were very painful, and particularly so when he masticated his food. The glands on the left side were also enlarged, but not so much as those on the right. The little patient complained of no fever or chill, and felt perfectly well except for these glands, and a sore on his lip. The sore was situated on the lower lip, slightly to the right. I found the lip swollen, and the mucous membrane of the inside red and congested. The edges of the sore were slightly indurated, but not to the extent we are accustomed to find when the primary lesion is situated on the penis. The sore was covered with a slight mucous secretion, and its edges were even with the adjoining tissue. The sore was about the size of an old-fashioned silver three-cent piece. His sore gave him very little trouble in eating, in fact, the only pain he complained of was situated at the angle of the jaw, in the region of the swollen glands.

The sore at this period had been on his lip for about ten days to two weeks. The glands had been swollen for about a week.

This history was substantiated by his father.

The chancre showed no signs of healing. An examination of his body showed the axillary and inguinal glands slightly enlarged. The appearance of his skin, April 9th, his first visit, was interesting but not decisive. I had no doubt of my diagnosis of chancre from the appearance of the sore and the accompanying glandular enlargement and the absence of fever. I cauterized the lesion to prevent, if possible, the spread of the contagion, and also warned his father to supply him with a separate towel, glass, cup, etc., and to let him sleep alone; above all, not to let him kiss anyone, and to destroy by fire the rags he used. I also removed him from school.

I cite these instructions as they will prove interesting in the subsequent cases and show how my instructions were not carried out.

The lad had been playing truant from school and had amused himself going to the dumping grounds at the foot of Seventeenth Street and East River. Here he had gone for beer in a pail for some of the laborers, receiving a few pennies for his trouble; often he would take a sip of the beer while he was carrying it back.

One of the parties that sent him must have had a mucous patch of the lip and some of the virus left on the pail inoculated the boy with the chancre, in some open cut that chanced to be on his lip. I paid a visit to this locality and found that it was customary for the men to drink directly out of the pail instead of using glasses. The way the tin is twisted at the edge of a pail makes it a perfect nest for syphilitic virus to lodge in. The tin cup is made after the same method. The tin is twisted down upon itself, in some cases it is soldered, but the soldering soon becomes defective and makes a nest for virus to lodge in. This cup is found in the public school, Central Park, and generally where water is on tap gratis. It is a relic of barbarism and should be banished, as the top of the cup could be made like a glass, molded in one round piece. The case I have cited might have inoculated the school by the stupidity in construction of this article of drink.

April 10th.—I examined the boy's skin at my office; an eruption was making its appearance.

April 12th.—The patient's chest and back were covered with a distinct syphilitic papular eruption.

Case II.—April 19th this patient's brother was brought to me for examination, to see if he had been infected. An examination at this date was negative. I dismissed him and warned him not to use his brother's towels or anything that his brother ate or drank from.

April 30th.—The same patient, aged twelve, was brought to me again, this time complaining of a pain at the angle of the jaw and a pain in deglutition, particularly in the right side. The submaxillary gland of the right side was swollen to the size of an English walnut, the left about the size of a hickory nut. The glandular swelling had begun only three days before.

An examination of the throat showed the right tonsil slightly hypertrophied and markedly congested. The congestion was confined entirely to the tonsil itself. The follicular openings of the tonsil were well defined. At the lower portion of the tonsil, in about its median line, a small ulcer could have been seen, about the size of the blunt end of an ordinary lead-pencil. The sore was covered with a white mucus, and at the first glance looked like a mucous patch, only the surrounding tissues were much more inflamed than it is customary to find connected with the presence of this lesion. The opposite tonsil was slightly inflamed. Clearing off the surface of the ulcer showed that it was very superficial and penetrated but slightly into the meshes of the tonsil.

May 10th.—Thirteen days from the appearance of the

initial lesion typical syphilitic eruption made its appearance and left no doubt of the diagnosis. An examination of the boy's body showed slight enlargement of the axillary and inguinal glands.

May 15th.—The patient troubled with headache, slight fever, and night-sweats, very much prostrated and desired to lie down all the time. These symptoms were absent in the younger case.

This case is particularly interesting, inasmuch as the inoculation took place through a stick of candy that the elder brother had put in his mouth after the younger one had sucked on it. The virus was thus carried from the lip of the one to the tonsil of the other. The date of the appearance of the sore in the second case shows that the inoculation took place previous to the first visit of his brother to the clinic, the virus being in his system, but when he was first seen the disease had not had time to develop the initial lesion.

Bosworth speaks of the open mouths of the crypts of the follicles as being a favorite site for the lodgement of syphilitic virus, the inoculation taking place by the virus being held in position, and not necessarily by a local abrasion of the tonsil.

The cases are interesting, as the chancre and the glandular swelling in the first case followed each other so quickly and in the latter appeared almost instantaneously. The history of the eruption is entirely at variance with the time that usually elapses between the presence of the chancre and the ingress of the eruption in the adult life. In the first case the eruption came out about ten to twelve days after the presence of the chancre, in the second case thirteen days after the initial lesion.

No suppuration in the cervical bubo occurred in either case. They yielded readily to treatment and disappeared almost entirely in three weeks after internal and local medication was once commenced.

In the second case the bubo reached the size of a large chicken's egg. I used internally the proto-iodidi pills, gr. $\frac{1}{6}$, and pushed to the extent of toleration. Locally I used an unguent of hydrargyri upon the enlarged glands. Oleum morrhuæ was used also in the case, as the patient was badly nourished.

Case III.—Sister of above cases, aged fifteen, applied to me, May 1st, for an examination, accompanied by her father, who said that he was beginning to be afraid himself. The examination at this time was negative.

May 10th.—The father told me that his girl's lip was swollen, accompanied by a sore.

May 15th.—The sister's upper lip was swollen and a significant sore situated in about the median line, the glands of the neck slightly enlarged, more on the right side than on the left side. An examination of the skin at this stage was negative. The sore gave her no trouble either in eating or drinking. She could eat a large pickle that had been soaked in vinegar, without the slightest pain. The lack of pain is very diagnostic of a chancre. This initial lesion reached the size of a cent before it showed any sign of healing. It extended backward and involved the inner margin of the lip.

The source of inoculation in this case was by kissing her brother. The eruption made its appearance June 5th, about twenty-six days after the initial lesion.

Case IV.—Male, aged eight, applied to me complaining of enlarged glands and a sore on the tonsil. The sore involved the lower part of the right tonsil. Its peculiar gray appearance and its irregular edge, accompanied by glandular swelling of the neck, rendered the diagnosis very simple. He had contracted it from impure practice. The history of this case was very decisive.

Case V.—Female, actress, aged twenty-four, came under my notice during the period of eruption. A slight redness of the lip located the initial lesion. She had been accustomed to make up in the same room with another member of the company. This lady suffered with a sore mouth, which my patient found out afterward to be of a syphilitic nature. They both used the same rouge for the lips, and applied it by the finger. The one suffering from the syphilitic throat must have lodged some of the virus in the rouge, and my case carried the infection to some open sore on her lip while she was preparing herself for the footlights.

Case VI.—Female, aged eighteen, came under my observation after she had consulted a notorious advertising specialist, who diagnosed her trouble as cancer of the lip and desired to operate, taking out a V incision. The nature and appearance of the sore, accompanied by the glandular swelling, rendered the diagnosis easy. The accompanying eruption substantiated it.

She caught her trouble while out with a friend on an excursion, by being kissed by an intimate acquaintance.

Case VII.—Female, aged twenty-three, applied to me for a sore lip, and the peculiar appearance of the sore and the history, accompanied later by the eruption, diagnosed chancre. She had been married but a short time. Her husband suffered from fever blisters, as she designated them, and desired to know if her throat was due to her husband's trouble.

Case VIII.—Male, aged forty-two, applied to me with a sore on the upper lip. Diagnosis, chancre, substantiated later by an enlarged cervical bubo and papular syphilitic eruption. Mode of contagion, drinking whiskey from a bottle after some of his friends at an excursion had imbibed previously from the bottle. Found out later that one member of the *soirée* had a venereal sore throat.

Case IX.—Male, aged twenty-eight, applied to me at my office for a sore throat. Diagnosis, mucous patches at the tip and side of the tongue, and also covering the inside of the lower lip. Taking his history I found he had been married six weeks, although he knew he was suffering from syphilis. I cauterized the sores and positively forbade him kissing his wife. I gave also internal medication. This patient drank, smoked, chewed, and partook of all the vices of the calendar.

Three weeks later he brought his wife to see me; he had disobeyed my instructions and had inoculated his wife with a chancre on the under portion of the tongue. The wife came out later with an extensive tubercular eruption, large ulcerative spots covered her back and breast, it was a case of malignant syphilis.

Case X.—Female, married, aged twenty-eight, chancre of upper lip. Her husband was dissipated and was suffering from a sore throat. Contagion by kissing. Enlarged glands and eruption substantiated the diagnosis.

Case XI.—Male, married, aged thirty. Contracted chancre from a prostitute who was suffering from sore throat. Inoculated his wife with chancre of the lip.

Case XII.—Female, cook, aged twenty, complained of a sore on her lip. The family had been away in the country during the summer, and she had entertained a male companion whom she was engaged to marry. Enlarged glands, eruption. Diagnosis, chancre. She caught the sore by kissing her lover, who was suffering from mucous patches of the lips and tongue. The diagnosis was made none too early in this case, as there were two babies in the family that the cook would fondle and kiss. The disease was not transmitted.

In looking over these cases and their histories it can be seen that chancre of the mouth, although not such a common disease, does exist; and knowing how readily the mucous patch of the mouth will inoculate a chancre it seems strange that there are not more cases of the primary lesion occurring in this locality reported.

It is interesting also to inquire into the occupations of some of these syphilitics. One patient, where I removed all the turbinated bones and septum in a necrosed condition made biscuits in one of the largest cracker houses in this city. The inside of his nose was one large ulcer, and the smell from the part indescribable.

One of the cases of chancre I have reported made pencils. No one would hesitate to put a pencil in the mouth to moisten the lead, yet here was a syphilitic who

handled them and who was liable to transmit some of the virus through these agents.

I have treated any number of syphilitics suffering from mucous patches who made cigars. Cooks who served in families and tasted the soups have applied to me, at the Bellevue clinic, for treatment for mucous patches.

Some of these cases do transmit their disease, while all suffering from the mucous patch of the mouth are liable to transmit the chancre virus to some innocent party.

We have a Board of Health to whom we are compelled to report all our cases of measles, scarlet fever, diphtheria, and kindred diseases; but a patient suffering from mucous patches or chancre of the body is allowed to roam at large, dispersing his contagion to any unfortunate, whether the innocent be a baby, child, or adult.

A law should be passed making the examination of the buccal cavity compulsory in all factories where the article of manufacture is liable to carry any syphilitic poison. This examination could be made at certain intervals, and the spread of this disease curtailed.

It is a dirty disease, it is said, so, like the ostrich when he is in trouble, the authorities hide their heads in the bushes and imagine everything secure.

112 West Forty-fifth Street.

A CASE OF POST-PARTUM HEMORRHAGE FOLLOWED BY SEPSIS—TREATMENT OF THE ACUTE ANÆMIA BY SUBCUTANEOUS INJECTIONS OF A SALINE SOLUTION—RECOVERY.

By B. ONUF-ONUFROWICZ, M.D.,

DOLGEVILLE, N. Y.

On February 24th I was called to see a patient who was in a state of great weakness and extremely anæmic from post-partum hemorrhage. The patient had had four normal confinements; all children were born at term and are alive to-day. No miscarriages had occurred previously. The menstruation had been regular and normal in quantity.

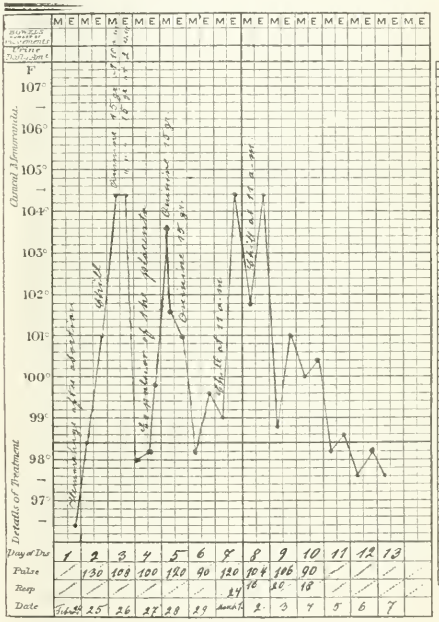
About December 22, 1891 (the exact date could not be traced), she had normal menstruation, or at least thought she had. Four weeks afterward, when she again expected it, she lost but a few drops of blood. She felt well, with the exception of a strong desire for well-seasoned and sour food, such as herrings, sauerkraut, etc.

It was, so far as the patient remembers, on February 14th that she had a rather considerable loss of blood from the vagina, which was caused by a fall on the floor. The hemorrhage lasted three days. Afterward she felt quite well until the evening of February 23d, when she became somewhat chilly. During the following night labor came on, and on February 24th, at 5 A.M., the fœtus was born, and with it an enormous quantity of blood was discharged. Blood continued to flow until 2 P.M., when I was first called to see her. The quantity of blood she had lost could not be stated exactly; a certain estimate was possible from the fact that it had soaked through the thickness of two mattresses and gathered in a large pool on the floor beneath. I should judge that she must have lost at least two quarts of blood. As she was rather anæmic before the hemorrhage occurred, and was not a robust person, this was a very serious matter.

When I arrived, I found the woman deathly pale, with hardly perceptible pulse. She complained of a peculiar oppression in the region of the heart, of nausea and dizziness. The slighest movement of her head caused everything apparently to turn around her. When she closed her eyes she had the sensation as if her entire body were dead. She was still losing blood constantly, although it flowed but slowly.

After I had irrigated the vagina with a one per cent. solution of salicylate of soda, I disinfected my hands thoroughly and made a vaginal examination. I found the uterus rather soft. The cervix was dilated sufficiently to let two fingers pass in easily. I could feel the placenta as a very soft, pulpy mass adhering to the walls of the uterus. I first tried to loosen the placenta, but soon gave it up, as I felt satisfied that this would be impossible without injuring the walls of the uterus and tearing the pulpy placenta to pieces. Thereby I would have risked leaving detached pieces of it in the uterus. But as the blood was still flowing immediate action was required. I therefore wiped the uterine cavity out with a piece of aseptic gauze soaked in turpentine, and tried to stimulate the organ into contraction by Credé's method. When by this procedure the hemorrhage ceased, the general condition of the patient required my fullest attention.

I first injected into the rectum one quart of a 0.7 per cent. watery solution of chloride of soda, to which two ounces of whiskey had been added. (I wish to state here in advance that all the water was absorbed.) Then I made everything ready for infusing a saline solution into the femoral artery according to the method of Dr. Dawbarn.[1] This method impressed me by its apparent sim-



plicity, which seems to enable the general practitioner to perform it almost at any time, as the apparatus required, viz., a Davidson or fountain syringe, a soft rubber catheter, and a hypodermic syringe, are usually at hand, and as the technique seems to be very simple. I am sorry to confess that, in spite of this, I did not succeed in my attempt.

After I had made the connection between the Davidson syringe and the catheter, which both had been thoroughly disinfected, I pushed the needle of a hypodermic syringe into the skin below Poupart's ligament, just where I could feel the pulsation of the right femoral artery. To have the least blood-pressure to work against, I directed the needle with its point toward the foot, keeping it at an angle of about sixty degrees with the axis of the thigh. My first attempt was a failure, as no blood came out of the needle. I took the needle out and tried for the second time, again without success. The panniculus adiposus of the patient (though she could not be called a fat person) was rather strongly developed. Perhaps this was the cause of my failing to strike the artery; I suspect that I did not introduce the needle deep enough.

[1] Medical Record, vol. xli., No. 1, page 1.

But whatever may have been the cause, I made no further trials, and resolved to inject the fluid into the subcutaneous cellular tissue.

For this purpose I connected the needle of the hypodermic syringe with the catheter, which at its other end was connected with the Davidson syringe. I chose the skin of the upper thighs as a suitable location for the infusion. I introduced the needle into the subcutaneous cellular tissue, and injected the solution (sod. chloride, 7 parts; water, 1,000 parts), which was kept as hot as the hand could bear, until a rather tense tumor had formed on the surface. Then I took the needle out and repeated the procedure in another place. The injection was made in about ten different places on both upper thighs. I ceased to inject when a little more than one pint of the solution had entered the subcutaneous cellular tissue. The salt-water was promptly absorbed, since in the course of six hours the swellings produced by the injection had entirely disappeared.

The general condition of the patient had improved during the injection, which had lasted about half an hour. The pulse had become fuller, the feeling of oppression and both the nausea and dizziness had diminished, and her face had regained some color. I found that the immediate danger had passed.

Judging from my experience in this case, I should think that one quart of fluid, or even more, could be easily introduced into the subcutaneous cellular tissue. In a case of urgency, however, I should prefer the infusion into the artery, and I hope that in the future I shall be more successful in accomplishing it.

After I had examined through the abdominal walls, I found the uterus well contracted and no blood flowing. I then examined the fœtus. I found it completely enveloped in a mass of coagulated blood; it was soft and pulpy, evidently by maceration, but it was still sufficiently preserved to allow an estimate of its age. It was three inches long, and had the appearance of a fœtus at the end of the fourth or beginning of the fifth month. Accordingly the patient must have mistaken uterine hemorrhages during the pregnancy for menstruations. Of both placenta and membranes nothing could be found among the blood clots expelled.

At 8 P.M. I saw the patient again. Her general condition was satisfactory. She still felt oppressed and dizzy, but less so than before. She had the sensation as if her left arm was dead. Pulse pretty good, about 120. Temperature, 96.4° F. I again irrigated the vagina with a one per cent. solution of salicylate of soda, and injected a pint and a half of water into the rectum. This water was partly absorbed and partly expelled.

On February 25th the patient complains of headache and of pain in the various spots where the saline solution had been injected subcutaneously. The feeling of oppression has nearly disappeared. She feels very thirsty. No loss of blood. Uterus rather well contracted. Toward evening the patient felt chilly and her temperature rose to 101° F. I gave two grains of calomel, as her bowels had not moved for several days. Irrigation of the vagina with a one per cent. solution of salicylate of soda t.i.d.

February 26th, A.M.—The patient has had four evacuations of the bowels since yesterday. The pain where the subcutaneous injections had been made is nearly gone. She still complains of headache. The temperature has risen steadily since when it was first taken; it has reached 104.4° F. at 11 A.M. I ordered quinine, fifteen grains. At 2 P.M. the temperature is still 104.4° F., so the same dose of quinine was given again. In the afternoon a considerable quantity of coagulated and liquid blood is passed per vaginam. The patient receives fifteen grains of fluid extract of ergot, subcutaneously, and the uterine cavity is irrigated with a one per cent. solution of creoline. This irrigation produces violent pain, and morphine has to be given subcutaneously to relieve it. In the evening the patient complains of nausea, but has no pain. The hemorrhage, which was promptly checked by the ergot, has not returned. The temperature has come down to 98.2° F. at night.

February 27th.—The patient slept well during the night. She has but little nausea. Fifteen grains of the fluid extract of ergot are given again hypodermatically, in the forenoon. At noon the placenta is expelled. It is a soft, pulpy mass, which is infiltrated with pus and has a most offensively foul smell. Accordingly, the lochiæ smell very foul too. Irrigation of the uterus with a sod. salicyl. solution after the expulsion of the placenta, which irrigation is repeated at night.

February 28th.—The odor of the lochiæ is much less offensive than it was yesterday. Severe headache. Pain in the left arm and leg, chiefly in the elbow-joint. There is no redness nor swelling. Tongue somewhat coated. Appetite rather poor. The temperature has been rising steadily since yesterday noon; it reached 103.3° F. this forenoon, and went down to 101.6° F. in the evening. Ordered quinine, thirty grains, in two doses. Irrigation of the vagina with sod. salicyl. solution twice. Castor-oil as a laxative.

February 29th.—Pain in the left arm and leg less severe. Intense headache, which is highly increased by the slightest movement of the head. Temperature, 98.2° F. in the morning, 99.6° F. in the evening. Ordered morphine internally to relieve the headache, which is the most prominent symptom.

March 1st.—The condition of the patient is the following: She looks very anæmic; lips somewhat bluish; skin rather dry. Skin and conjunctivæ have yellowish hue, the latter especially, where covered by the lids. The breasts are flabby and of somewhat dark color; a colostrum like liquid can be pressed out of them. Body and extremities free from swellings. No meteorism. The tongue, which showed a thick coat the day before, looks much cleaner to-day, but shows some fissures. Lungs free. Twenty-four respirations per minute. Heart-sounds quite distinct. The second sound is somewhat prolonged. Action of the heart regular. Pulse rather full, regular, 120 beats per minute. There is some enlargement of the spleen, the dulness in its long diameter being somewhat increased from above downward, say seven finger breadths in one and five in the other direction. The percussion-sound is almost flat. Edge of the spleen distinctly palpable. The cervix is considerably swollen and admits two fingers easily. No infiltration of the parametrium or peritoneum. The lochial discharge has nearly lost its odor. Pain in the right elbow and knee more intense. The patient has also pain in the right shoulder-joint, and the sensation as if cold water was poured on these joints. On inspection no redness, no swelling is visible, but there is some sensitiveness to pressure. At 11 A.M., soon after the examination was made, the patient had a chill. The temperature, which was 99° F. in the morning, rose to 104.4° F. in the evening. No antipyretics were used. The patient got some moderately strong wine and fluid food, such as milk, raw or soft-boiled eggs, beef-tea, etc. Morphine to relieve the headache.

March 2d.—Has still pain in the left arm and leg, and also in the abdomen. The temperature has fallen to 101.8° F. At 11 A.M. the patient has a chill, and in the evening the temperature reaches again 104.4° F.

March 3d.—The pain in the abdomen has disappeared after the administration of one tablespoonful of castor-oil. The headache has diminished; the head aches only when the patient moves it. In the left arm and leg she has now no real pain but the sensation of pricking, which appears only at times. Temperature, 98.8° F. in the forenoon, 101° F. in the evening.

March 4th.—The patient is in much better spirits, inclined to joke, and believes that she would be perfectly healthy if the headache had entirely left her. Temperature, 100° F. in the forenoon, 100.4° F. in the evening.

March 8th.—Since March 5th the temperature has not

exceeded 98.6° F. The patient is still rather weak, has some headache, but feels well otherwise.

March 22d.—Has been out of bed for the last few days. The headache is gone, but she still feels dizzy at times. No pain in the back, no retention of the urine, very little discharge from the vagina, fair appetite. The patient has recovered so far that she can be safely discharged. I wish to add here, that during the whole course of disease the function of the bladder was normal, or nearly normal, and that there was no excessive secretion of sweat at any period of the disease.

To sum up, the predominant features of the case were the following:

1. The course of the temperature, as shown in the table, is characterized by three typical chills and by the irregularity of the curve, which repeatedly ascends very suddenly and descends just as suddenly and steeply. Partly, however, the type is masked by the quinine given in the beginning of the disease.
2. The slight icterus which was present.
3. The enlargement of the spleen.
4. The pain in the joints characterized by the want of any objective sign.
5. The violent headache.

The case was one of sepsis in which the general symptoms of infection prevailed. The course of the temperature was similar to that observed in cases of tropical malaria, which the disease resembled in many other points. The etiology, however, leaves no doubt as to the nature of the case in question.

Cases of septicæmia do not occur frequently in this period of antiseptic treatment. I, therefore, concluded to publish this case, although I make myself liable to be accused of having neglected the proper use of antiseptics.

In my defence I may state that the circumstances under which I had to act were most unfavorable. The fœtus had probably been dead for several days or weeks before it was born. The placenta was decomposed. The surroundings of the patient, especially the clothes and linen with which she came in contact, were exceedingly unclean. Rapid action was necessary, as the life of the patient was in danger, and though my hands and the instruments used and the genitals of the patient were treated strictly antiseptically, a complete asepsis could not be attained under the circumstances mentioned. Finally, the woman was very much predisposed to the invasion of microbes in consequence of the weakness, which resulted from the hemorrhage.

The Disadvantages of English Sanitoria.—Dr. A. Tucker Wise, in his work on the "Alpine Winter in its Medical Aspects," intimates that the reason why the treatment of incipient phthisis in the south of England resorts is so unsatisfactory, and why so much better results are obtained in Continental sanitoria, is that in the former little or no attention is paid to the requirements for comfort and health of the visitors. "In addition to the rain and wind of the British Isles," he says, "there appears to be also either a total ignorance or disregard of the requirements of health visitors There are scarcely any shelters provided—no glass covered galleries, verandas, nor convenience for taking the air in wet weather. Indoors, the temperature maintained by stoves and open fires is most uncertain and partial. If any ventilation is available it is by Tobin's tubes, or apertures communicating direct with the exterior, quite unsuitable for a windy climate. I have seen 'through' ventilation adopted for corridors—an excellent system in hot weather, but unbearable and perilous in our English winter. These drawbacks alone drive hundreds of English people to seek change in other countries in spite of the disadvantages entailed by travel or absence from home and friends."

The Druggists in Saratoff, Russia, have agreed to supply poor people with drugs free of charge up to the amount of $100 per annum for each druggist.

Clinical Department.

A CASE OF FRACTURE OF THE PENIS.

By ALBERT KROG, M.D.,

NEW YORK.

Although such a condition as the above cannot possibly exist, I have nevertheless retained the term in order to signify the lesion as generally understood, but meaning simply and purely a contusion and laceration of the organ. The case, which I have been but lately able to observe, is worthy of record in consequence of its rarity.

N. N——, a Swede of powerful physique and health, called upon me to ask advice regarding the peculiar condition of his penis. Eight days previous to my seeing him he got up in the middle of the night on account of not being able to sleep, and looked out of the window. Suddenly the window came down with a tremendous force and struck his penis a little behind its middle portion. Thus far *his* history.

Soon after the organ began to swell immensely, and for the next three days blood oozed from the urethral canal. Besides the swelling, there was considerable discoloration. At the time of my seeing the patient, eight days after the accident, the organ was pendulous, swollen six to eight times its normal size, and of purplish-blue color. There was no pain whatsoever, urine passed slowly but without any trouble. From the fact that blood had oozed from the canal for several days, I surmised that the corpus cavernosum had been lacerated, and with it also the mucous membrane of the urethra. The patient would not allow me to pass a catheter. I ordered simply a lotion of lead-water. No doubt my patient had been the subject of a chordee, and had himself thrown the window upon the organ in order to get rid of the unpleasant condition.

From the few cases on record, there seems to be but little trouble as to the absorption of the hæmatoma. The great danger lies in the rupture of the urethral canal and its consequent absorption of bacteria. Death may occur as the result of pyæmia and gangrene. The cicatrix formed, generally produces a curvature and malposition of the penis. The part anterior to the lesion is necessarily deprived of the possibility of erection. In case of sloughing (abscess) of the integument of the penis, high fever usually occurs.

Treatment consists in the application of cold, in the form of water, ice, ice-bags, lead-water, etc., rest, and support of the organ upon the abdomen. In case of abscess and infiltration of urine, incisions are necessary. The catheter should be frequently used, or even retained permanently.

221 East Tenth Street.

TRANSPOSITION OF THE VISCERA.

By IRA T. JOHNSON, M.D.,

ROCHESTER, N. Y.

Mrs. M. E. B——, aged forty-nine, died of uterine cancer, April 23d last, and for certain reasons the coroner ordered an autopsy, which I, as coroner's physician, performed the next day. I found the following rare arrangement of the internal organs:

The right lung had two lobes, and the left lung three.

The heart was on the right side of the spinal column, occupying the same position relatively that it should have on the left side.

The arch of aorta turned to the right, and the thoracic portion descended on the right side of the median line. The innominate arose from the left side of the arch, and the common carotid and subclavian from the right side.

The position of stomach was reversed, the cardiac end lying to the right of the median line, and the pyloric end to the left. The position of the several portions of intestine was the reverse of the usual.

The spleen was on the right side, and the liver on the left.

The vermiform appendix occupied the same relative position on the left side that it should have occupied on the right.

In fact, it was a case of complete transposition of all the internal organs, though the ureters, kidneys, and some other parts which would require a more thorough investigation to determine whether they were transposed or not, were not examined as closely as they should have been with regard to that point. The woman had always been right-handed.

Physical examination of a daughter aged sixteen years, and of similar disposition and appearance as the mother, did not disclose any abnormal position of the internal organs.

A NEEDLE IN THE OVARY.

By FRANK W. HAVILAND, M.D.,

NEW YORK.

Mrs. S. C——, aged twenty-one; married four years; has never been pregnant. She has been complaining of abdominal pain and tenderness, and has had a bloody flow from the vagina for about two months. On July 1, 1892, an examination was made and a diagnosis of pelvic neoplasm requiring operation was arrived at. On July 16th, assisted by Drs. Ludden, McCready, and McCroskey, the patient being under ether, I made an incision in the median line, and directly under it found a large irregular mass, on either side of which could be felt a smaller mass, all bound firmly together and to the floor and sides of the pelvis. On attempting to raise the omentum I found it bound firmly to the central mass, and much inflamed and thickened. It was torn loose, and while this was being done a small abscess was ruptured, allowing pus to enter the abdominal cavity. After thoroughly washing out the peritoneal cavity with hot water, the large, thick, and inflamed portion of omentum was ligated and removed. The uterus could now be felt, with the upper portion of the sigmoid flexure firmly united to the upper portion of its posterior wall, and all bound down by firm adhesions. After ligating and cutting through the larger bands, and tearing through many others, the gut was successfully separated from the uterus, leaving the wall of this organ much torn and bleeding. The hemorrhage would not yield to the cautery nor to pure carbolic acid, but was controlled with a deep stitch of catgut firmly tied. The small mass on the left side was now torn from the floor of the pelvis, and was found to be an ovary and tube much thickened and inflamed. This was ligated and removed. The mass on the right side was raised, after cutting and tearing through adhesions, and found to be an ovary and tube forming a mass about the size of a duck's egg. The mass was ligated and removed. The abdominal cavity was now thoroughly washed out with hot water and closed with interrupted sutures of silk-worm gut.

The day following the operation the diseased tissues were carefully examined. The large mass taken from the right side, presenting a large fluctuating surface, was incised, and a quantity of pus escaped. To ascertain the extent of this abscess cavity I inserted my index-finger, which received a sharp prick. On turning to the light and examining further, I found a portion of an ordinary sewing needle, about three-quarters of an inch in length, very much discolored, and with a sharp point.

It is more than probable that this portion of the needle had been swallowed by the patient, passed through the alimentary canal to the sigmoid flexure, where it penetrated the wall of the gut, passed on through a fold of the omentum and into the peritoneal covering of the posterior wall of the uterus, and finally into the right ovary. It carried with it infection from the alimentary canal which produced an inflammation along the whole course traversed by the needle, thus causing the gut, omentum, and uterus to be firmly bound together by inflammatory products, and the ovarian tissue to break down.

The patient recovered from the operation without complications, and since July 30th has been about the house, feeling better than for many months past.

THE NERVOUS SEQUELÆ OF TYPHOID FEVER.

By R. ELLIS, M.D.,

DANBURY, CONN.

The nervous sequelæ of typhoid are many—embracing lesions of the meninges, brain, spinal cord, spinal, and peripheral nerves.

In this fever a practitioner expects every complication, and he is surprised at no nervous sequelæ. In the meninges we may observe the following lesions: purulent inflammation, congestion, minute hemorrhages, œdema, cerebro-spinal meningitis. In the brain itself we may meet with cerebral hemorrhage, thrombosis, embolism, and congestion. The nervous lesions are shown by their characteristic physical signs, due to central or peripheral causes, such as hemiplegia, paraplegia, anæsthesia, hyperæsthesia, convulsions, local paralysis, aphasia, and neuralgia. Hemiplegia is rarely seen, and recovery usually follows. Paraplegia (cervical to lumbar) very rarely occurs, and recovery seldom follows. Extreme nervous exhaustion may bring on a complete hemiplegia or a paraplegia, with slow recovery. If, however, a post-mortem follows, one need not be surprised to find no cause to explain the evident lesion—the cause lies in the exhausted vitality of the nerve-cells.

In my practice last winter a young man (twenty-three), ill twenty days with the typhoid fever, developed complete sixth cervical paraplegia with almost complete anæsthesia, and died in two days. No autopsy was allowed, but I felt convinced that no pathological condition existed sufficient to explain the complete paraplegia, save anæmia and exhaustion of the spinal cord.

Anæsthesia is often observed. Hyperæsthesia, general or local, is, however, by far the most common of all the nervous phenomena observed in this fever. This hyperæsthesia may occur during any stage of the disease, and is often of very serious annoyance. I remember a case occurring in the fifth week (patient convalescing), when the hyperæsthesia, limited to the toes of the right foot, was so severe, especially at night, as to require hypodermics of morphia and a cradle to keep all clothing from touching the sensitive area. So persistent and annoying was this hyperæsthesia that the patient's life was endangered, and finally it became necessary to remove the sufferer from college to his home—a distance of one hundred miles. Though the weather was intensely cold, the patient was benefited by the trip, and rapidly recovered from his severe attacks, but weeks elapsed before perfect recovery—weeks during which, at intervals of twelve to twenty hours, the patient would be suddenly seized with intense hyperæsthesia of the big toe. It seems necessary to say that hysteria did not increase the hyperæsthesia, for the patient was a college man of strong physique.

Convulsions with opisthotonos are rarely observed, and are usually due to a previously existing kidney lesion, increased by pathological renal and blood changes.

Some form of local paralysis is frequently noted—paralysis embracing all or a single one of the muscles related to the part. An entire extremity may be paralyzed, but often only a single muscle or a group of muscles—as the flexors or extensors, or a group supplied by a single nerve, as the musculo-spiral group.

Aphasia, amnesic or ataxic, occurs, and is usually complete—slow recovery follows, as a rule.

Neuralgia is very common, especially of the head, face, and trunk.

Toothache is often so severe as to greatly distress the patient.

Peripheral neuritis occurs—neuritis characterized by pain and swelling, and so differentiated from local hyperæsthesia in which swelling does not take place.

Multiple neuritis and poliomyelitis occur but rarely. Both may present the same symptoms, but the paralysis from poliomyelitis is persistent, and muscular anæmia and weakness continue, whereas in multiple neuritis the symptoms may, in a short time, entirely abate.

Insanity, due to cerebral malnutrition, is usually of short duration—the intelligence returning slowly as strength is gained.

The system is so exhausted as the fever develops and convalescence follows that as a result of nervous depression we may at times find signs of central nervous injury. In these cases it is well for the practitioner to avoid a too hasty diagnosis of organic nerve lesion, for these nervous symptoms of organic lesion ofttimes quickly disappear. I remember a case of hemiplegia in a young lad where all the symptoms pointed to a poliomyelitis, and for this reason a prognosis unfavorable as to a complete recovery was given. Yet after the patient gained strength and could take solid food, the paralysis entirely disappeared.

EYES OF DIFFERENT COLOR.

Dr. Joseph Forrester, of Butler, Pa., writes that Dr. Hubbel's observation, published in a recent number of the Medical Record, has been duplicated by himself. He says:

"My case is a girl aged eight, a blonde, except the iris of one eye (the left, I believe), which is hazel, but somewhat irregularly pigmented, while the iris of the right is a clear blue. Her father is a blonde, with blue eyes and very light-colored hair, eyebrows, eyelashes, and beard. The mother is a handsome brunette with dark brown hair and hazel eyes. Both parents are young and the girl is their first child. The family lives in Salamanca, N. Y.

QUININE IN CHOLERA.

By ERSKINE B. FULLERTON, A.M., M.D.,
PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS, STARLING MEDICAL COLLEGE, COLUMBUS, O.

In Dr. John M Woodworth's "Cholera Epidemic of 1873 in the United States," under the head of "Notes on Treatment," quinine is referred to as having been given in small doses, at uncertain intervals, by two writers, and by one in conjunction with atropine, amounts not stated.

In Dr. Edward O. Shakespeare's "Report on Cholera in Europe and India" no reference is made to quinine in the chapter in which treatment is considered, but it was used in the cities of Teruel, Toledo, and Tembleque in Spain during 1884. The dose is not mentioned in any case, nor the method, except in one only, where it was the hypodermic, with a strong inference that it was so used in the two other cities. The journals at the time gave the dose as fifteen grains, administered hypodermatically. When we recall two well-known facts—first, that the Koch germ is found inside the intestine and not in the blood, and secondly, that the direction of quinine is toward the kidneys, but little, under ordinary circumstances, escaping with the fæces—a reason for failure when administered hypodermatically is apparent. In 1884 Koch places quinine next to mercuric chloride in development-inhibiting (not disinfectant) power, the former acting in strength of 1 to 5,000, the latter in that of 1 to 100,000. In other words, one-half grain of the mercurial is the required equivalent for growth-inhibition of ten grains of quinine. When it is recollected that the lethal dose of the one is about two grains, and that of the other about two ounces, the disparity for practical effects is apparent. If five grains of quinine can inhibit the development of the spirillum in three pints of rice-water discharge *in situ*, what ill effect can be apprehended from four or six times that amount? All this, however, is "reasoning after the event" with the writer.

In the epidemic of 1873 the use of quinine was early begun in cases coming under my care in this city. In over thirty cases of choleraic diarrhœa there was only one that proved refractory to the quinine treatment, developing into what under the old nomenclature would be called a mild case of cholera. Of the severer or typical form of the disease I had five cases, in all of which quinine was given in doses of seven and one-half grains in solution in the usual way, by means of a sufficient quantity of aromatic sulphuric acid; and this dose was repeated at intervals of an hour and a half until the symptoms were under control, then in smaller doses at longer intervals. Ice was allowed from the first in guarded quantities, and, so soon as the tendency to vomit was sufficiently controlled, ice-water.

In some cases a small amount of morphine was given, in others not. In all cases there was decided improvement after the first dose, and a steady abatement of the symptoms as the treatment progressed. The patient in whom the disease was, perhaps, farthest advanced when treatment was commenced vomited but three times and purged but twice after the first dose was given. In this case, with the typical pulse, thirst, cramps in extremities, sunken countenance, and loss of voice, the vomiting was incessant, and the constant discharge from the bowels had penetrated the mattress and stood in a pool on the floor beneath. In one case in which I was consulted by the physician in attendance, quinine was exhibited to the extent of fourteen grains in the pill form. The patient's symptoms, typical as described, were controlled for forty-eight hours, he returning to his place of business on the second day. At the end of the above-mentioned period the symptoms returned and he died in the course of a few hours, no quinine having been administered during the relapse.

While aware of the danger in forming conclusions too radical on the success of treatment in so limited a number of cases, and also bearing in mind that epidemic diseases differ in tractability and severity during different seasons of their prevalence, and at differing periods of the same epidemic, yet I have been unable to rid my mind of the impression, strongly made nineteen years ago, that the quinine treatment had much to do with the results above recorded. That the disease prevalent in Columbus, O., in 1873 was of no mild type is shown by the report of Dr. Woodworth, where, out of one hundred and thirty cases recorded, there were ninety deaths, a mortality of more than sixty five per cent.

Permit me to strongly urge upon the physicians now treating the disease in quarantine or hospital that they try the remedy. I would suggest that one drachm be dissolved in three ounces of water by means of a sufficient quantity of dilute or aromatic sulphuric acid, and that of this solution a tablespoonful be administered and at once repeated if vomiting occurs, and afterward at intervals of an hour and a half, until thirty grains have been taken, and thereafter pro re nata. If judged best, a small amount of morphine may be added, or a few drops of chlorodyne—their utility I doubt. There are a few provisos:

1st. The ten-grain doses should be in solution, so that in case of vomiting some may be retained.

2d. That the patient be not already moribund from toxæmia, or in pulseless collapse.

While the discoveries of the last few years render the theory of Dr. Cunningham, that cholera is "malaria perniciosa," untenable, there is nothing as yet by which we may infer that the treatment may not be essentially the same.

Eggs by Enema.—Dr. Huber says that the absorption of eggs administered in enema is markedly promoted by the addition of about fifteen grains of salt to each egg. Peptonizing the eggs also increases the chances of their absorption by the rectum.

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MODERN TREATMENT OF CHOREA.

CHOREA, a disease so called, is better described as a chain of symptoms belonging to some disorder of which the pathology is at present unknown. This symptom group embraces irregular spasmodic movements, incoordination of voluntary motion, and often muscular and mental weakness.

The mental impairment may become a real insanity. The forms of mental abnormity most common in chorea are mania and delirium, running into chronic delusional states, and sometimes ending in dementia. Whatever the disease or diseases now known by the generic term chorea may really be, the condition is in itself sufficiently serious to demand the best skill and care of every conscientious practitioner. Better methods to secure more rapid results are what everyone is looking for, in spite of the fact that ordinary chorea tends to disappear, whatever the treatment, in from eight to twelve weeks. In the *International Medical Magazine*, July, 1892, James Hendrie Lloyd states that most of the benefits obtained by treatment are obtained by attention to the condition of the blood Hence arsenic and iron are the best drugs.

Chorea as seen and treated in Parisian hospitals offers some points of special interest.

The *University Medical Magazine*, June, 1892, contains a valuable abstract of French opinions concerning the treatment of this disorder, collected by Marcel Beaudoin and published in the *Revue de Thérapeutique Medico-Chirurgicale*, April 1, 1892.

While antipyrine is considered valuable by the majority of physicians interviewed, the views held are widely different, and seem in their diversity almost as much an affair of temperament as of experience. They afford a refreshing change, however, from the provincial routine that prevails in too many cis-Atlantic dispensaries. Among Parisian doctors, at least, Fowler's solution is not the great and only remedy. One, Dejerine, insists that all special medication in infantile chorea is useless. Tonics, massage, gymnastic exercises, dry frictions, salt baths, and general sound hygienic measures are earnestly recommended. Massage, according to Ollivier, gives the happiest results. As internal remedies this practitioner prescribes iron and arsenic, and also makes use of hydrotherapy. Gilbert Ballet believes that common chorea tends to spontaneous cure, and that disturbing drugs should be withheld. Antipyrine he condemns though believing in Fowler's solution in small doses, and in tonics and iron for anæmic cases. The local application of ether to the vertebral column is recommended when the disease assumes a serious form, and bromide of potassium when there is mental disturbance. Strict hygiene, good food, walking in the open air, avoiding all fatigue, Ballet considers essentials of treatment.

Jules Simon, earlier on record as realizing the harm ; residence at the sea-shore may do to sick children, condemns it in chorea. The least exciting tonics, as salt baths and dry frictions, he advocates, together with the following general plan of treatment : 1. During the first fifteen days the child is to lie in bed, and warm frictions mustard-plasters, or dry cupping are to be applied over the upper part of the back, hemlock and aconite being the internal remedies. 2. At the end of a fortnight the child is allowed to get up, and antipyrin is administered in progressive doses of one, two, three, four, and five grammes in the course of twenty-four hours. The drug is thus given for several weeks. 3. Then arrives the time for rhythmical gymnastics, especially necessary when bodily movement is sluggish. Legroux, Raymond, Sevestre, and Albert Robin think highly of antipyrin. The latter combines it with bicarbonate of soda, and gives it in as high a dose as two grammes a day. After a fortnight's use of antipyrin, the arseniate of sodium is substituted, in doses of two teaspoonfuls daily of a solution of five centigrammes to three hundred grammes of water This solution finished, antipyrin is again administered Moral psychic hygiene Comby considers of first importance, then quieting of the nervous system by bromide of potassium in daily doses of from two to four grammes together with cold douches.

Should this treatment fail, antipyrin is given. In ordinary cases, Germain Sée recommends arsenic and antipyrin. Rheumatic subjects require salicylate of sodium, associated with antipyrin and sulphur baths. In cardiac choreas this authority advises the addition of iodide of potassium and iodide of calcium to the heart remedies. Prolonged sleep, induced by chloral if necessary, Joffroy considers all important, especially in mild cases. Fatigue, as well as physical and mental excitement, must be strenuously avoided.

Hypnotism, so much in evidence of late, has also been tried as a remedy for chorea. In *Normandie Médicale*, August 1, 1892, Gibert, of Havre, reports amelioration of grave symptoms in a girl twelve years old, by means of hypnotic suggestion. Will training, rather than hypnotism, more nearly expresses his method. Bromide of potassium, gymnastics, hydrotherapy, had proved equally without avail. Night and day the inco-ordinated movements of general chorea never ceased. A fortnight of carefully graded commands and some massage of the facial muscles brought about wonderful improvement, sleep became natural, and the girl's countenance regained an expression of intelligence. The patient then could restrain all choreic movements in the presence of the physician when ordered by him to keep perfectly still ; but when away, a mild chorea still remained. A residence in the country, far from all relatives, among hardy peasants, who were directed to ignore the child's condition, brought about a perfect cure. The author called

ttention to the fact that there are purely neurotic horeas, such as Luys claims to cure by means of revolving mirrors, and that this form of the disease is commoner than any other. Fever and heart trouble in horea can be explained on other grounds than rheumatism. They denote profound disorder of innervation, often existing as manifestations of hysteria in children, nd are in no sense due to rheumatic poison. As no art of the human economy requires so much oxygen as he nerves, the imperative necessity of country life in the reatment of chorea is at once apparent.

PREVENTIVE INOCULATIONS AGAINST CHOLERA.

THERE has been a good deal written and said in regard o anti-choleraic vaccinations, and the subject is naturally ne that excites much interest. While it is very unlikely hat cholera will ever be best dealt with by any process f "vaccination," yet the discovery of some practical nethod of securing immunity would be of great service. n Berlin, Brieger, Kitasato, and Wassermann have made esearches which show that some of the lower animals an be protected against inoculations that in control aninals cause cholera. The immunizing liquid was obained by cultivating the microbe in a solution of tissue ibrinogen.

The experiments have been carried much further by Haffkine, of Paris, working at the Pasteur Institute. His investigations have been unfortunately attended with a great deal of newspaper notoriety, which we believe ould not have been sought for or desired by the investigator. In the *British Meaical Journal* for September 10th, Mr. E. H. Hankin, who has been subjected personally to Haffkine's inoculations, gives an account of he new method.

The first step in getting a protective vaccine was to produce an abnormally virulent culture of the cholera microbe. This was done by passing the virus through a series of guinea-pigs. By adopting a special process it was found that the virus increased in intensity until a maximum was reached. The *virus fixe* thus obtained kills the guinea-pig in six to eight hours, whether given per os or injected into the peritoneum. If injected under the skin, however, it produces only a local inflammation and necrosis, and if the animal recovers he is found to have immunity. Since the local disturbance and necrosis are serious, however, it was found necessary to prevent this, and to this end the *virus fixe* is attenuated by growing the microbe in a slow current of air

If a dose of this attenuated virus is injected under the skin of a guinea pig, an extensive œdema develops within twenty-four hours. During the next few days this diminishes in size, leaving, however, a hard nodule, which persists for a considerable time. If a week later the animal is inoculated with a similar quantity of the strengthened virus, an œdema develops, which is less than in the first case and does not lead to necrosis. When tested a few days later the animal is found to have acquired an immunity against the cholera microbe in whatever way it may be inoculated. This immunity has been found to be undiminished a couple of months after treatment.

Rabbits have also been made immune by the same method. They then show themselves refractory to every form of inoculation, including the method above described, which in the control animals leads to a disease resembling the cholera of human beings. M. Haffkine has also produced this immunity in pigeons. These facts led M. Haffkine to try the effect of these inoculations on himself, and afterward on seven other gentlemen.

Two inoculations were given. The result was to produce a local œdema and swelling, with some fever and malaise. The local effects pass off, leaving only a hard nodule at the point of injection.

It is interesting to observe that M. Haffkine has followed almost exactly the same process in securing his "vaccine" that Pasteur has done in securing the protection virus of rabies.

The question now arises, Does the protection protect human beings. The fact is not demonstrated, and more experiments are needed. In the first place, there is some reason for believing that the same method which protects gninea-pigs and rabbits will protect man; still the argument is not a very strong one. M. Haffkine has shown, however, that his virus does give topical immunity to human beings. If a person, for example, is inoculated subcutaneously with active cholera microbes, there results a widespread œdematous swelling and redness which lasts for several days, leaving a hard nodule. The reaction is rather characteristic. In persons who have received the protective inoculations, no such reaction occurs. Hence, since topical immunity is given by the inoculations, it is inferred that there is a constitutional immunity also.

The experiences of an immunized newspaper reporter in a Hamburg cholera hospital have been paraded for business purposes, and it is not possible to base any scientific conclusions upon them. Apparently he was no more exposed to cholera than some physicians and nurses who have escaped. The proof will come perhaps to a person who dared to take into their intestines the *virus fixe*.

TROUBLE IN TEXAS.

WE have watched with a prayerful interest the development of medicine, medical societies, medical colleges, and medical journals in the great State of Texas. There has always been an elemental freshness and vigor about the Lone Star institutions which gave promise of great things. Their journals have been the reddest, their society meetings the most parliamentary, their medical ethics the most sensitive, and their controversies the stormiest of any of the subdivisions of this great republic. Out of this friction and ferment there have come interesting journals, alert colleges, active and original physicians, and a State Texas Medical Association. But there is trouble brewing now for this latter organization. The *Texas Health Journal*, an interesting periodical devoted to sanitation, a particularly unadulterated baking-powder, and other useful things, begins its July leader as follows:

"The ignorant, inhuman, and brutal conduct of the Judicial Council of the Texas State Medical Association, during its session held at Waco, Texas, April 28 to May 1, inclusive, 1891, has no parallel in the proceedings of medical societies; in fact, such a precedent cannot be

found in this nineteenth-century civilization; white-capism towers into temples of justice when compared with it; in fact the darkest dungeons of hell, compared to the deeds of that Council, are as flowery gardens and oriental castles. For this humiliating conduct the twelve men who constituted the alleged 'Judicial (?) Council,' have just received a rebuke from the American Medical Association that ought to not only cause the eternal blush of shame to mantle their cheeks, but sink deep into their hearts and take possession of their very souls—provided they are blessed with such psychological qualifications and attachments."

We have looked around to see what was the cause of this retributive piece of rhetoric; but are as yet a little uncertain. It seems, however, that our esteemed colleague is reinstated and that everything promises to be right, so far as the *Health Journal* goes; but "the keen lash of criticism" is to be applied to the Judicial Council and the State Association hereafter, *pro re nata*. The lash is whirled about in an ominous way, later on; "Dr. Q. C. S. skins the gang that dominates," "Gangrene of a once honored body," are some of the pithy expressions with which our injured critic attacks the great Texas organization. We trust that justice will reign in Texas, and with it peace and prosperity to the State Society and the Lone Star editor.

News of the Week.

The New York State Association of Railway Surgeons will hold its Second Annual Meeting at the Academy of Medicine, in this city, November 14, 1892. The profession is cordially invited.

The New Mexico Medical Society, which was from 1881 to 1885 known as the Las Vegas Medical Society, was incorporated in the latter year under its new name, and though its membership and usefulness spread throughout the Territory, it was only this year that its managers felt able to hold the first meeting elsewhere, namely, at Albuquerque, on September 14th and 15th. The meeting was chiefly devoted to business affairs of the Society, though, besides the address on "The History, Present Necessity, and Future of the Society," by the retiring President, Dr. F. H. Atkins, papers were read by Dr. W. G. Hope, of Albuquerque, on the question, "Is there Malaria in the Rio Grande Valley?" which elicited vigorous discussion; on "A Fatal Case of Appendicitis Caused by a Grape-Seed," by Dr. E. B. Shaw, Atchison, Topeka & Santa Fé Railroad Surgeon, of Las Vegas; on "A Newer Procedure in Perineal Section for Stricture," by Dr. W. R. Tipton, of Las Vegas; on "The Taos Valley as a Resort for Consumptives," by Dr. T. P. Martin, of Taos; "A Résumé on Recent Progress in Establishing Immunity by Bacterial Products," by Dr. F. H. Atkins, of East Las Vegas. The interests of the Society were greatly promoted and many new members added, the total number now reaching fifty. The new officers are: *President*, Dr. James H. Wroth, of Albuquerque; *Secretary*, Dr. Francis H. Atkins, of East Las Vegas; *Treasurer*, Dr. W. S. Harroun, of Santa Fé. On account of the central position of Albuquerque, the annual meetings will probably be held there for the next few years.

The Second Annual Meeting of the American Electro-therapeutical Association will be held at the Academy of Medicine, in this city, on October 4, 5, and 6, 1892. The sessions will be held at 9 A.M. and 3 P.M. An exhibition of electrical appliances will be given, and numerous entertainments are provided for the guests.

The Enthusiasm for Quarantine has reached a high pitch in New Orleans where one earnest medical gentleman advises that we quarantine the world, keep our bowels open, and trust in God.

Malpractice Suits have the peculiar quality of being able to propagate their own kind. A few months since the court at Albia, Ia., mulcted a Dr. Abegg in a considerable sum for alleged malpractice in setting a fractured limb. As a result the coming term of said court has four malpractice cases to consider, aggregating $30,000 damages.—*Medical Review.*

The San Francisco Therapeutical Society was organized in San Francisco, July 23, 1892. The following were elected officers: *President*, Dr. F. A. A. Belinge; *Vice-President*, Dr. J. W. Blake; *Treasurer*, Dr. J. R. Davidson; *Secretary*, Dr. M. Neumann. The Society will meet twice each month.

Removal of Quarantine against Pleuro-pneumonia.—The Secretary of Agriculture has issued a proclamation, under date of September 26th, removing the quarantines heretofore existing in the counties of Kings and Queens, N. Y., and Essex and Hudson, N. J., for the suppression of contagious pleuro-pneumonia among cattle. This completes the dissolving of all quarantines established by the Department of Agriculture in the United States for the suppression of this disease. It is officially declared that the United States are "free from the disease known as contagious pleuro-pneumonia." The seaboard and frontier inspection will be continued to prevent the reintroduction of the disease into this country.

Dr. Henry Grafton Clark, of Boston, died at Hyde Park, Mass., on September 23d, at the age of seventy-eight years. He began the practice of medicine in Boston in 1834, and retired about two years ago. He was connected with the Massachusetts General Hospital for twenty-five years.

The Value of a Toe.—A workman employed by a dredging company in New Jersey had three of his toes cut off by one of the machines, and sued the company to recover $10,000 damages. The jury awarded him $1,260, fixing the value of each toe at $420.

Dr. José Miguel Perraza died recently in this city, at the age of forty-six years. He was born in Santa Maria, Cuba, but having been engaged in a revolutionary expedition was expelled from the island. He studied medicine in Spain and then removed to this city, where he had practised several years before his death.

Antiseptics and Cholera.—Quite a number of experiments have been made regarding the effect of the different germicides upon the life of the microbe. Alcohol, in a ten per cent. solution, stops the development of the comma bacilli only when added in a proportion of one part to ten of the nutritive fluid. As sulphate of iron is frequently used as a disinfectant in an epidemic of cholera, it is important to recognize the fact that it does

not kill the bacilli, but it simply hinders their development. It does, however, stop putrefactive changes which would cause the death of these organisms. The use of this agent, therefore, is to be avoided in cases of cholera. Carbolic acid (one part to four hundred of the nutritive fluid), peppermint oil (one part to two thousand), sulphate of copper (one part to twenty five hundred), quinine (one part to five thousand), corrosive sublimate (one part to one hundred thousand), possess the power of arresting the development of this microbe, and it is possible that they may absolutely cause its death. One very important point was brought out by these experiments, namely, that the comma bacilli die very easily when dried, and this may explain the fact why epidemics of cholera disappear after a certain time. There is a very marked difference between the vitality of the specific germ of cholera and that of small-pox. The former dies a natural death, while the latter may retain its vitality, when dried, for an indefinite period.—Dr. J. H. McCollom, *Boston Medical and Surgical Journal.*

Cancer and Erysipelas.—Attacks of erysipelas are said to have a favorable effect on the course of certain forms of insanity, particularly lypemania. Erysipelas inoculations have had also an appreciably good effect upon sarcomatous growths. It is stated that experiments are now being made to determine whether similar inoculations will not affect carcinoma favorably.

Over Seven Thousand Deaths from Cholera have so far been reported in Hamburg. The epidemic is, however, rapidly abating.

Pan-American Medical Congress.—There will be a meeting of the Committee on Organization of the Congress in Cincinnati at the time of the annual meeting of the Mississippi Valley Medical Association, October 12, 13, and 14, 1892. The preliminary announcement of the Congress will be issued within a few weeks. This announcement will show that the organization has been perfected in almost every colony and country of the Western Hemisphere. The local medical societies in each of the constituent countries are made auxiliary to the Congress, which will be held in Washington, D. C., September 5, 6, 7, and 8, 1893. Dr. Reed, of Cincinnati, Secretary-General of the Congress, and Chairman of the Committee on Organization, announces that the date of the Rome meeting of the International Medical Congress has been definitely set for September 24th of next year. This gives an interval of sixteen days between the Washington and the Rome meetings, during which time an easy trip can be made from the former to the latter city. It is possible that a steamer may be chartered to proceed direct from New York to Rome.

The Cantani Method of Treating Cholera.—Two special measures may be given a thorough trial, hypodermatoclysis and enteroclysis, recommended by Cantani upon the ground that the organism has lost a very large quantity of its water, which must be re-supplied in order to sustain life. For the first he recommends eighty grammes of common salt and six of carbonate of soda, dissolved in two litres of boiling water and cooled. From one to two litres of this fluid is allowed to flow slowly beneath the skin of the flanks through a fountain-syringe and the cannula of an aspirator. The tumor formed by the fluid is slowly rubbed away. He advises the warm bath in conjunction with the infusion. This may be repeated in two or three hours. For enteroclysis, a mixture of laudanum and tannic acid is employed. The formula consists of from five to ten grammes of tannin, thirty to fifty drops of laudanum, and fifty grammes of powdered gum arabic in two litres of boiled water or infusion of chamomile. This should be given early, as soon as it is found that a simple diarrhœa does not yield at once to rest in bed and simple remedies. The rectal syringe is furnished with an elastic tube three metres in length. With this the whole length of the colon can be filled, and often a quantity can be made to pass into the small intestine. The temperature of the mixture and the quantity may vary according to the age of patient.

The Tri-State Medical Association.—The following is a list of the papers to be read at the fourth annual meeting of this Association, which will be held in Chattanooga, October 25, 26, and 27, 1892: "Eye Symptoms in General Disease," by Dr. J. L. Minor, of Memphis, Tenn.; "Talipes Equino-varus" with presentation of patients, by Dr. C. W. Barrier, of Rome, Ga.; "Sequences of Otitis Media Purulenta," by Dr. T. Hilliard Wood, of Nashville, Tenn.; "Report of 1,050 Strabismus Operations, with Some Observations on the Same," by Dr. A. W. Calhoun, of Atlanta, Ga.; "Special vs. General Practice in Medicine," by Dr. W. J. Killen, of Birmingham, Ala.; "Synovitis," by Dr. S. B. Cowan, of Tullahoma, Tenn.; "The Present Status of Medical Education in the South," by Dr. Luther E. Granby, of Atlanta, Ga.; "Pharmaceutical Preparations of the Present Day," by Dr. John C. Le Grand, of Anniston, Ala.; "A Clinical Study of the Relation between Scarlet Fever and Diphtheria," by Dr. W. D. Hoyt, of Rome, Ga.; "The Treatment of Inguinal Hernia," by Dr. J. W. Handly, of Nashville, Tenn.; "Fistula in Ano," by Dr. Andrew Boyd, of Scottsboro, Ala.; "Stricture of the Male Urethra: its Diagnosis and Treatment," by Dr. W. L. Gahagan, of Chattanooga, Tenn.; "Phimosis," by Dr. Erasmus T. Camp, of Gadsden, Ala.; "The Rational Treatment of Enlarged Prostate in Old Persons," by Dr. George W. Broome, of St. Louis, Mo.; "Advanced Theories in Psychical Science," by Dr. John E. Purdon, of Cullman, Ala.; "Drunkenness and Its Gold Cure," by Dr. John P. Stewart, of Attala, Ala.; "Surgery—Things to Do and Things not to Do," by Dr. Willis F. Westmoreland, of Atlanta, Ga.; "A Few Selected Cases in Laparotomy," by Dr. W. H. Wathen, of Louisville, Ky.; "Extra-uterine Pregnancy," by Dr. Richard Douglas, of Nashville, Tenn.; "The After-treatment of Abdominal Operations," by Dr. W. E. B. Davis, of Birmingham, Ala.; "Hepatic Abscess," by Dr. E. B. Ward, of Selma, Ala.; "Report of Treatment of Sterility," by Dr. J. M. Head, of Zebulon, Ga.

Widows.—There are over twenty millions of widows in India, and of these nearly eighty thousand are under nine years of age.

The Next International Medical Congress, it has been decided, will be opened on September 24, 1893, and close October 1st, at Rome.

Krafft-Ebing has been unanimously recommended to succeed Meynert, deceased, in the Chair of Psychiatry in the University of Vienna.

The Mattei Treatment of Cancer was one of the most widely advertised of the numerous medical quackeries which have arisen of late years. It became so widely known in England, and so many testimonials of its wonderful cures were presented, that it received a great deal of free advertising. In response to certain representations made by Lady Paget in a monthly periodical, and by the editor of the *Review of Reviews*, a committee of investigation was formed in the early part of last year, to inquire into the claims of the treatment. The committee consisted of Sir Morell Mackenzie, Mr. Lawson Tait, and Dr. G. W. Potter. It seems remarkable that a nostrum, the composition of which was kept secret, except that it was given out to be bottled electricity of different colors, supplemented by certain globules. should have been the subject of serious investigations; but as several people of influence and education had announced themselves as believers, and as the Matteists openly avowed that they courted full investigation, it appeared that to bring to light its true character would be an important public service. After the committee was ready to work, the champions of the cure began a series of tactics to prevent themselves from being proved impostors. At first, on one pretext or another, they declined to receive for treatment each case of genuine cancer as it was presented to them. After it became evident to the public that they were doing this, they agreed to take five cases of genuine cancer of the breast. These five cases were treated by the Mattei system for a year, under the observation of the committee, but, as was to be expected, they grew steadily worse. The editor of the *Review of Reviews*, who at the outset was a strong partisan of the method, and who appears to have acted in the capacity of an umpire, began to see that the Matteists were not gaining credit by their results. When these five cases were evidently not being cured, the Matteists requested the committee to report on old cases which they produced, claiming that they had already been entirely cured. This the committee declined to do, and the champions of the treatment began to make technical objections to different points of the investigation. Finally the investigation ceased. The "electricities" so called were found to be composed of distilled water.—*British Medical and Surgical Journal.*

Reviews and Notices of Books.

Uric Acid, as a Factor in the Causation of Disease. By Alexander Haig, M.A., M.D. Oxon., F.R.C.P. London: J. & A. Churchill. 1892.

This book comprises one of the most thorough investigations to date. The author writes very clearly, so that anyone can comprehend the significance of uric acid. The careful experimentation is worthy of note, and the action of the drugs on the human economy is such that each effect is considered. The chapters on the action of the salicylates, quinine, morphine, headache, epilepsy, rheumatism, gout, diabetes, Bright's disease, deserve especial mention.

Text book of the Eruptive and Continued Fevers. By John William Moore, B.A., M.D., M.Ch. Dublin. William Wood & Co., New York. 1892.

Dr. Moore has carefully compiled in this text-book a complete résumé of the eruptive fevers. It is eminently practical for the busy practitioner of medicine, and goes into very elaborate details, giving all modern views and researches to date. A valuable addition, and of great service, will be found the charts of temperature in all the different fevers. The bacteriological examinations are well worthy of note. The most welcome portion of this work will be the treatment of the various febrile diseases and the prescriptions contained therein. It is safe to say that this book will be an ornament in the library and of valuable assistance in practice.

De la Périnéotomie et de ses Applications. Par le Dr. Charles Uillems, Assistant à l'Université de Gand. Avec 4 Planches en Phototype. Gand: H. Engelcke; and Paris: Vve Babé et Cie. 1892.

In this work the author makes a very strong plea in favor of perineotomy in many cases where now laparotomy is employed. Among the applications of the operation which he advocates, are its ease of performance and its practicability. He commends it for many cases of extirpation of the rectum, diseases of the prostate and bladder, recto-urinary and recto-vaginal fistulæ, extirpation of the uterus, and in the removal of intra-pelvic tumors. All the details of the different operations described were carefully worked out on the cadaver, but the author has not yet proved the practical value of the operation in all its applications upon the living subject. There are four plates, made from photographs, which assist in the elucidation of the subject.

Transactions of the American Pediatric Society. Third Session, held in Washington, D. C, September 22 to 25, 1891. Edited by William Perry Watson, A.M., M.D., Recorder. Volume III. Printed by Fairchild & Co. 1892.

This is a complete report of the transactions of the Pediatric Society, giving the papers read at the meeting with the complete discussion, and embodying all that transpired at the Washington meeting, held September 22 to 25, 1891.

Elements of Materia Medica and Therapeutics, Including the Whole of the Remedies of the British Pharmacopœia of 1885, and its Appendix of 1890. By C. E. Armand Semple, B.A., M.B. Cantab., M.R.C.P. Lond., Secretary to the Court of Examiners, and to the Board of Examiners in Arts of the Apothecaries' Society; late Member of the Court of Examiners and Senior Examiner in Arts of that Society; Physician to the Bloomsbury Dispensary. With 440 Illustrations. London and New York: Longmans, Green, & Co. 1892.

The book is concise and complete, giving the method of preparation, characters and tests, official preparations, therapeutics, and dosage of every drug in the British Pharmacopœia. The illustrations are very numerous, showing plants, crystals of minerals, methods of preparation, and numerous other things connected with pharmacy and materia medica. The book will prove of great value to students as a book of reference, and to all physicians who may be weak in their pharmacy and therapeutical knowledge.

Caffeine Stimulants.—In England the consumption of tea is rapidly increasing and coffee diminishing. Cocoa has increased thirty-four per cent. in five years.

The Incubation Period of Cholera varies from one to fifteen days, and averages two to five days.

A Serious Blunder.—Two dozen bottles of henbane-seed, labelled celery-seed, were recently sold in England. Some cases of poisoning resulted, but none terminated fatally. All but two of the bottles have been recovered.

Society Reports.

AMERICAN GYNECOLOGICAL SOCIETY.

Seventeenth Annual Meeting, held at Brooklyn, N. Y., September 20, 21, and 22, 1892.

JOHN BYRNE, M.D., OF BROOKLYN, PRESIDENT.

FIRST DAY, TUESDAY, SEPTEMBER 20TH.

Address of Welcome.—DR. CHARLES JEWETT, of Brooklyn, gave a brief address of welcome to the members on this the Society's first visit to their city of nearly a million inhabitants. A cordial welcome was extended by the resident Fellows, by the Brooklyn Gynecological Society, by the Medical Society of the County of Kings, and by the General Profession of the city. They hoped to fully reciprocate the hospitalities which had so often been extended the local Fellows at the meetings in other cities.

Periodical Inter-menstrual Pain.—DR. CHAUNCEY D. PALMER, of Cincinnati, read the first paper, which was on a subject treated of by him in an article published in the *American Journal of Obstetrics* last March. He had seen and had under his care for months at a time, within the last twelve years, five to six cases, distinctly pronounced, of what he would call periodical inter-menstrual pain. The symptomatology was, at a certain time following menstruation, generally about the middle of the inter-menstrual period, there had been attacks of pelvic pain, located in either ovarian region, sometimes on one, again on the opposite side. These pains varied in severity and duration, were usually short, usually intermittent, came on at night as well as during the day, continued two to nine days, were uninfluenced by bodily movement, were unattended by febrile phenomena. The literature of the subject was limited, but it had been written upon briefly by Coe, Oldham, Olshausen, Tait, Thomas and Mundé, Pozzi, etc. The conclusions arrived at by the author were: 1, Periodical inter-menstrual pain is a comparatively rare disease; 2, the disease is ovarian, not uterine; 3, it is an oöphoritis, or peri-oöphoritis, or both; 4, the chief underlying exciting cause of these attacks of pain is the morbid obstruction to the extrusion of the contents of the Graafian follicles; 5, many other morbid conditions (uterine, peri-uterine, or ovarian) may be associated with the oöphoritis, but their presence is not the cause of the essential symptoms; 6, cure is effected only by overcoming the disease of the ovary or by its extirpation.

Complications During and After the Operation in a Few Recent Cases of Abdominal and Pelvic Surgery.—DR. W. H. WATHEN, of Louisville, opened this paper by cautioning the young men in the profession against allowing their enthusiasm to lead them into doing operations which might or might not redound to their glory while proving of no benefit, or disastrously, to the patients and bringing discredit upon scientific surgery.

The cases reported from his practice of the past year, it was hoped, might teach us to do better work by learning how to treat complications and prevent accidents.

The first case was that of a woman, referred to him by a surgeon in Missouri, with a diagnosis of pelvic abscess on the left side. In July, 1891, the patient had begun to suffer severely in the left inguinal region, temperature and pulse increased. Tumor felt in the left side of the pelvis extending into the abdomen. After several weeks the pain and fever subsided and the patient thought she was well, until, in July, 1892, she had a recurrence of pain and fever, and again noticed the tumor. Correct diagnosis impossible, but the necessity for laparotomy was positive. Dr. Wathen opened the abdomen August 20th, found the omentum thick, signs of extensive chronic peritonitis, firm adhesions, tumor found to be an imbedded broad-ligament cyst, which had not only unfolded the layers of the broad ligament, but had stripped the peritoneum from the posterior pelvic wall to a point above the sigmoid flexure of the colon, separating the layers of the meso-colon so that the mesenteric surface of the bowel was attached to the thin cyst-wall. The bowel could be traced on the anterior surface of the tumor over to the right side. Uterus enlarged to three times its normal size, peritoneal covering partly separated, exposing muscular coat. The patient made an uninterrupted recovery.

The second case was that of a woman who had had pain and pressure in the region of the uterus six months. Dr. Wathen felt exudates on both sides of the organ larger than an orange. Exploratory laparotomy was performed, a band of omentum nearly as wide and thick as the hand was found attached to the right broad ligament in the region of the severe pain. It was ligated in two places and divided. The enlarged uterus and the exudates in the broad ligament were united in one solid malignant mass. The uterine mass had insinuated itself under the sigmoid flexure. The patient had since had no pain nor fever, but the ultimate result naturally would be fatal.

The third case proved to be one of extensive adhesions from peritonitis which probably had been caused some time before by a fall.

The fourth case proved to be one of extra-peritoneal abscess of appendicial origin in the right inguinal region, although the appendix could not be found. The patient recovered.

In the fifth case, in which he extirpated the uterus for malignant disease, the nurse, for some unknown reason, during convalescence, gave a vaginal injection of bichloride, 1 to 2,000, which penetrated into the peritoneal cavity. Nevertheless, the patient recovered.

Case of Lithopædion.—DR. WILLIAM T. LUSK, of New York, presented a lithopædion, or calcified fœtus, which had remained in the mother's abdomen thirteen years. It was not until after certain symptoms had arisen to indicate laparotomy and the mass had been removed that the mother recalled the fact that, thirteen years before, she had been in labor pains which ceased, and she and her physician afterward were subjects of mirth among her friends. Only a short time afterward Dr. Lusk met with another case which appeared to be similar, the similarity persisting during the operation, but instead of a lithopædion the mass was a calcified fibroid.

DR. MANN, of Buffalo, related two cases in which he had operated and found a lithopædion, the pregnancy having taken place some years before.

The Elective Cæsarean Section; the Most Favorable Time for Operation.—DR. HENRY C. COE, of New York, read the paper. One's experience with this, however limited, should be recorded, especially in America, where few operators had had a personal experience with more than four cases. The United States had, however, contributed a fair proportion of the successful cases of the Sänger operation of the last decade, seventy in all, with a maternal mortality of forty per cent. With a tinge of local pride Brooklyn and New York Fellows of this Society could point to eighteen cases, performed by nine different surgeons, with a mortality of thirty-three and one-third per cent., four of the six fatal cases having been particularly unfavorable, while one death, the case of Dr. Grandin's, was due to puerperal mania and could not be referred to the operation. It was interesting to note that the ten cases reported since 1889 had been practically elective and that they were all successful.

The question was asked, Should we choose our own time for operating or allow this to be determined for us by the onset of labor? It was curious to note the uniformity with which writers on obstetrics repeated the injunction, Do not operate until labor has begun! The dangers which it had been urged would be incurred by disregarding this rule were serious hemorrhage, due to imperfect contraction of the uterus, and retention of the lochial discharges by reason of non-dilatation of the cervix. But the author was convinced that these dangers were purely imaginary, and based solely on theory. His

own experience, although limited to two cases, entirely accorded with the position taken by Harris, that, other things being equal, we increased rather than diminished our chances of success by operating before the commencement of labor. The advantages to be secured by operating before labor could be summarized as follows: To the surgeon—(1) after obtaining all the needed counsel, he set his own time for the operation during the day, and was not summoned hurriedly at night to operate by imperfect light and without his regular corps of assistants; (2) he secured the same conditions as in ordinary cœliotomy—thorough preparation of the patient, rooms, instruments, etc; (3) since the patient was in the best possible condition, he was not hurried, was not obliged to "work against time," slurring those numerous minor details which were so essential to success (this was all-important to American surgeons, the majority of whom were necessarily tyros.) To the patient—(1) she was spared the suspense incident upon long waiting (we recognize the importance of the *morale* in ordinary cases of abdominal section, how much more important here, where two lives were at stake!); (2) having been thoroughly prepared for the operation, she went to the table in such a condition that the element of shock was reduced to a minimum, and the subsequent convalescence was more rapid and uncomplicated; (3) asepsis was perfect. As no examination of the genital tract had been made on the day of the operation, there was no chance for infection in this way. Sepsis could never be positively excluded under contrary conditions, especially where labor was induced in the usual manner.

The author had sought to show as concisely as possible that the two essentials to success—early operation and perfect technique—were intimately related to each other, so that in securing the one we secured the other. The elective operation should be made such in every sense of the word; it should be subject to the same rules as those which governed ovariotomy or abdominal hysterectomy. The time to be chosen was near the end of pregnancy, but before labor had begun. Hemorrhage need not be feared, the danger of shock was lessened, and sepsis was eliminated. The author then gave the histories of two successful cases operated upon by himself by elective Cæsarean section.

The Remarkable Results of Antiseptic Symphysiotomy.—Dr. Robert P. Harris, of Philadelphia, sent a contribution on this subject which was read by the Secretary, Dr. Coe. It reviewed the subject in the author's usual analytical, painstaking, and conscientious manner.

It would be profitable, he said, in marking progress, to look back to the early days of symphysiotomy, and note what occurred under the first forty operations, dating from 1777 to 1804. Women recovered, 25; died, 15; children saved, 12; dead, 28. The results of the second forty were about the same. From 1777 to 1858 there had been fully one hundred operations, and more than this since 1865.

To Professor Morisani must be given the credit of reviving the operation, and of having continued to persevere with it until its technique had become perfected and its rate of mortality reduced to the lowest possible figure. He commenced to study symphysiotomy on the cadaver in 1863, and first operated upon a living woman in 1866, saving both mother and child. But in other hands, with less care, the operation was less successful, for in Morisani's report in 1886 there had been in 18 operations loss of 8 women and of 5 children. Continuing, but using greater care, 13 different operators had, since 1886, delivered 40 women by symphysiotomy, 6 of the women enduring two operations with success, and 35 of the 40 children were saved.

Here we had an operation which had been characterized by Baudelocque as murderous and unphilosophical, converted, by subcutaneous section and rigid antisepsis, into a safe surgical measure, without even the dreadful lameness which was once urged against it, the symphysis being readily made to reunite firmly under proper fixation of the pelvis. It was true that in four instances there was produced a fistula of the bladder or urethra, which Morisani claimed should not occur under proper precautions.

Two inches and a half of separation, on the average, were all that should be claimed as safe in the living woman. The operation was not practicable on a Robert or Naegele pelvis, or in one where there was coxalgic anchylosis; nor in cancer of the cervix; nor in cases where the cervix would not dilate; nor in obstructions from exostosis, tumors, etc. A minimum pelvic contraction to $2\frac{3}{4}$ inches was safer than Morisani's minimum of $2\frac{3}{8}$ inches.

The author considered the question of choice between the three incisive methods of delivery in cases of contracted pelvis: the improved Cæsarean, the Porro Cæsarean, and symphysiotomy, and gave the technique of the latter. Obstetric surgeons were likely to prefer the improved Cæsarean section, especially as it was possible, under most favorable circumstances, to reduce the maternal mortality to six per cent. The author's table represented all the 40 women operated upon by symphysiotomy since 1886 as having recovered, except one; while 35 of the children lived.

Cœliotomy after Labor.—Dr. William H. Parish of Philadelphia, read this paper. He said that in dealing with abscess in the pelvic connective tissue, or within the tube or ovary, or when encysted within the peritoneal cavity, all obstetric surgeons probably recognized the imperative rule that the pus must be evacuated, usually with the knife and early in the progress of the case. The fact that exceptionally cure might take place from spontaneous rupture did not in the mind of the surgeon make interference less necessary. Although the necessity for surgical interference was thus universally appreciated by operators, yet it too often happened that the physician did not extend practical recognition to the necessity for early diagnosis of suppuration, and for early resort to surgical relief. Too often the operator was called when prostration from blood infection, etc., made recovery extremely improbable. There was still a wide-spread belief that when suppuration took place after child-birth it was usually located in the pelvic connective tissue, and that it was best to wait for fluctuation or bulging in the vagina before attempting evacuation. As a matter of fact, the pelvic connective tissue was not the usual site of the suppuration. When here situated the pus was usually evacuated per vaginam or above Poupart's ligament external to the peritoneum. But in some cases a median cœliotomy might be indicated as an aid toward ascertaining the location of the pus when its location was not known. The operator who expected never to meet with suppuration in the pelvic connective tissue might at times open unnecessarily the peritoneal cavity, when the much simpler and safer procedure of extra-peritoneal incision, either in the vagina or above Poupart's ligament would suffice.

It was well known ovarian cystomata, dermoids, hydro-, hæmato-, and pyo-salpinx did not render pregnancy impossible, and labor, by reason of torsion, contusion, or rupture, established localized or general peritonitis; and if the symptoms did not promptly subside there existed an absolute indication for cœliotomy, with removal of the offending mass and with irrigation. But exceptionally, the peritonitis and other evidences of infection might be merely transitory and operation be safely deferred.

For a long time it had been recognized that abscess might occur in the uterine parenchyma after labor, and it had been recommended that in such a case the uterus and its appendages be removed. Doubtless, when the abscess was of large size, or the septic infection of the uterus was far advanced, the operation was the only one justifiable; but the author had had one case which

lowed that total extirpation was not always necessary. His patient recovered after evacuating the mural abscess, and taking out a V-shaped piece.

The encysted pus sometimes accompanying puerperal peritonitis, local or general, was at times very great, as in one case in which he operated three gallons were drawn off, yet the patient made an excellent recovery. Such cases have sometimes been mistaken for diffuse suppurative peritonitis. Plastic peritonitis existed in all such cases, and was conservative after the formation of pus. Diffuse suppurative peritonitis rapidly terminated fatally, and the pus was diffused over the peritoneum, although most abundant in the pelvic region.

During the progress of plastic peritonitis cœliotomy was rarely indicated, unless pus was present. Yet not infrequently this form of peritonitis was dependent upon an abscess within a tube or ovary, etc.

In diffuse septic suppurative peritonitis the rapid tendency to death rendered cœliotomy quite hopeless and unjustifiable, if deferred until the peritonitis was well advanced. The experience of surgeons, at most, had not been reassuring, for he knew of no case of operation ending in cure, and he asked whether the invariably fatal result had been due to lateness of the operation. Removal of the uterus and its appendages, with irrigation, though rational as getting rid of a large supply of infectious material, yet would increase the shock, and add much to the danger of simply opening the abdomen and irrigating. Perhaps it would be wiser to limit one's self to abdominal irrigation, supplemented by uterine curetting and douching.

The author had performed cœliotomy eight times after labor, with one death. In every case there was pus and limited peritonitis.

Usually the dull curette with repeated douching would suffice the first few weeks of the puerperium, and he had his fears of the safety of the cutting instrument in the uterus during this period.

Certain Aspects of Gonorrhœa in Women.—Dr. Charles P. Noble, of Philadelphia, read this paper. Prior to 1873, when Noeggerath published his celebrated paper, our knowledge of the natural history of the disease was very incomplete, and no adequate conception of the relation of gonorrhœa to endometritis, salpingitis, and peritonitis existed. Noeggerath's apparently exaggerated conclusions forced the subject upon the attention of the profession, and knowledge of it had steadily grown since. An interesting and serious phase of gonorrhœa in women, was the invasion of the womb, tubes, ovaries, and peritonium. This extension of the disease was known to Bernutz, forty years ago, but its real frequency was not appreciated until demonstrated by the daily work of the modern abdominal surgeon. In illustration of this form, the author related a case in a woman, free from genital catarrh, who contracted gonorrhœa of the cervix and vulvo-vaginal gland, with little if any involvement of the vagina; yet it spread promptly to the tubes and caused a large collection of pus within the peritoneum. The pus was not examined bacteriologically. How the disease spread to the tubes, ovaries, and peritoneum was still in dispute.

The more recent studies of Wertheim had led him to conclusions which agreed with clinical experience. He was able to demonstrate that the gonococcus would produce peritonitis in white mice. As the mucous membranes of white mice were refractory to gonorrhœa, while those of man were susceptible, he argued that this fact went far to show that the gonococcus could produce peritonitis in man. He had demonstrated also that the gonococcus could penetrate pavement as well as cylindrical epithelium. He claimed that the gonococcus could penetrate the connective tissue and infect lymphatics. He had demonstrated gonococci in pus from an ovarian abscess. If Wertheim's observations should be confirmed, gonorrhœal ovaritis and abscess, peritonitis, and rheumatism would receive a satisfactory bacteriological explanation.

The author spoke of the chronicity of gonorrhœa, which had also been first emphasized by Noeggerath. He also discussed the question whether gonorrhœal salpingitis ever resulted in a perfect natural cure with a functionally active tube. He had never seen a case with such a result. Speaking of the likelihood of the second tube and ovary becoming infected if one were removed for disease, the author would advise extirpation of the sound one also in elderly women, and let younger women decide for themselves whether they would take the risk of a second operation.

All who discussed this paper doubted whether double gonorrhœal salpingitis was ever cured in the sense of permitting subsequent pregnancy. The chronicity of the disease was dwelt upon.

Retro-peritoneal Tuberculosis Simulating Hernia.—Dr. Edward P. Davis, of Philadelphia, read the history of a case of this nature. It occurred in a woman who began to suffer from pain in the right inguinal region following the lifting of a heavy weight. She was kept in bed eleven weeks, during four of which she had metrorrhagia. On recovering she resumed her work as a domestic, but some time afterward was again seized with severe pain in the right ovarian region. When she was seen by Dr. Davis she was well nourished, thoracic viscera normal, abdomen moderately distended; a swelling in the right inguinal region which resembled a hernia; temperature from 100° to 102½° F., pulse rather rapid. She gave a good history; her father, however, had died of tuberculosis. It was believed that she had a hernia or tubal disease. The tumor was cut down upon and the resemblance to a hernia persisted during the dissection of the sac. It was utterly impossible, however, to reduce the tumor, and as the patient was about to pass into collapse, the abdomen was hastily opened in the median line, and while the finger was trying to return the mass it penetrated an abscess, which contained several ounces of pus. The pelvic peritoneum was thickened and engorged, and in the hypogastric region was commencing peritonitis. Briefly, it became evident that the disease had had its origin behind the peritoneum, and must have been of the nature of tuberculosis. As was usually the case, the pus in the tumor did not contain the tubercle bacillus. The patient made a good recovery, and had shown no signs of tubercular or other disease since.

Accouchement Forcé in Certain Obstetrical Complications, with Remarks on the Treatment of Post-partum Hemorrhage.—Dr. Egbert H. Grandin, of New York, read this paper. Obstetrics of to-day, he said, were very different from formerly. Methods which in the past had been condemned were now recognized as appropriate, especially because of the introduction of antiseptic surgery. Chief among the valuable methods which had been rendered safe by antiseptic principles, were accouchement forcé and tamponade of the uterus. In recognition of these truths, he wished to submit to the criticism of the members certain arguments in favor of accouchement forcé in some obstetric complications, and to lay before them what he considered the treatment *par excellence* of post-partum hemorrhage. Several cases were related by way of illustration, one of which was the following: A multipara, eight months gravid, had hemorrhage, her doctor inserted a vaginal tampon. When Dr. Grandin was called her pulse was rapid and thready, the facies that of the loss of blood, the condition indicated necessity for rapid evacuation of the uterus, primarily in the interests of the fœtus, secondarily those of the mother. He withdrew the gauze from the vagina, inserted the whole hand, found the cervix one-eighth dilated, the margin of the membranes presenting. He separated the margin of the placenta, introduced the finger, thirty minutes being required for dilatation; then bi-polar version was performed, the fœtus extracted, the placenta removed, and the patient thus spared all further loss of blood. The uterus was packed with gauze. Satisfactory recovery.

Several other cases which were cited, in which the same procedure was resorted to, were types of uræmia, threatened or actual, and of disproportion between the size of the pelvis and the fœtal head, etc.

In all of these cases the results were quite satisfactory, and he asked the members to compare them with such as not infrequently followed temporizing and slower methods. He had acted in the interests of the child as well as those of the mother. One of not the least advantages which modern obstetrics possessed over the practice of the past was that the interests of the mother stood not necessarily in opposition to those of the child.

The author impressed the greater safety of bringing on labor with the sensitive hand, over manipulations with instruments in the dark.

What were the objections to the method? In the first place, it might be claimed that uterine atony might result, with the serious effect of post-partum hemorrhage. This, however, did not hold good at all in placenta prævia, while in threatened uræmia venesection was a good thing. When the method began to be advocated for post-partum hemorrhage, he had objected to it because of its possibly preventing contraction, but practice had shown that this objection was purely theoretical, for gauze introduced into the uterus really favored contractility of the uterus, and the organ speedily regained its tone. He now favored its use wherever hot injections failed to cause a response. The second objection to accouchement forcé was that it might injure the cervix. While this had not occurred to him he did not doubt that it might, but its possibility would not deter him from resorting to a method for obtaining a living child. Besides, other methods involved about equal risks in this direction.

The President's Address.—Dr. John T. Byrne, of Brooklyn, President of the Society, read a lengthy address, which was devoted chiefly to contrasting the two operations for uterine cancer—electro-cautery and vaginal hysterectomy. First, he thanked the Society for the honor conferred upon him when it had elected him to fill the high position which had been so ably filled by such distinguished predecessors as Dr. Fordyce Barker, etc. He alluded also to the reference in the President's address of last year to the too great frequency with which women had been mutilated sexually, and said this abuse was rapidly being corrected. It was desirable, however, to again call attention to as great an abuse, that of unnecessary speculum examination of young unmarried women.

The President thought that three papers were sufficient to read at each session of the Society, or eighteen in all, if enough time would be given for discussion. He then passed to a review of the statistics on which it had been attempted to justify vaginal hysterectomy for cancer of the uterus, and stated his reasons for urging the adoption, instead, of the safe operation of partial amputation by the electro cautery.

He had often been asked to explain what at first thought appeared to be a transparent incongruity, namely, why better results should follow or be claimed for amputation of a cancerous cervix by galvano-cautery than for the same operation by other means, or, above all, the extirpation of the entire uterus. At first he could do little more than point to clinical facts and venture to surmise that coincident with either of the latter surgical procedures there might take place a traumatic infection in parametric tissues, which, though apparently healthy, were, in all probability, already predisposed in some special manner to pathological changes. Increased experience in the treatment of uterine cancer by the galvano-cautery had rendered it more than probable that this was the correct explanation. Proliferation in outlying tissues seemed to be hastened by the knife, while the cautery had an opposite effect.

Further comment on the statistics given, even did time permit, would, he thought, seem uncalled for. They spoke for themselves, and in his opinion so emphatically that "they who run may read." From the the following conclusions, essentially those arrived at Dr. Jackson five years ago, could be drawn:

1. The ambiguous manner in which the statistic tables of vaginal hysterectomy have been constructed so misleading, and in some instances so suggestive of e roneous inferences, as to render the compilers open the charge of *suppressio veri* or *suggestio falsi*.

2. Any operation known to be attended or follow by an average primary mortality of over fourteen p cent. in the hands of the most experienced surgeons is grave and a dangerous one, and demands for its justific tion a large percentage of *permanent* cures.

3. The frequency and rapidity with which recurren takes place after vaginal hysterectomy for cancer, ev when the disease has appeared to be limited and circu scribed, prove conclusively that it can lay no just clai to this essential feature.

4. As the average period of life in cancer of the uteru when not operated upon, is not less than two years, b often more, suffering has not been lessened but aggr vated, and life has not been prolonged, but shortened the vast majority of all cases thus far subjected to vagin hysterectomy.

5. As in twenty-eight cases of vaginal hysterectomy f cancer of the fundus at the Berlin Clinic no fewer tha seven died from recurrence within twelve months, th grounds on which some have conceded to this operatio even a limited field, are inconsistent with facts, and there fore not tenable.

6. As the operation is, in many respects, more dange ous than the disease for which it is undertaken, and, a the majority of all patients afflicted with uterine cance would live longer without than with it, it is not a safe c a useful operation and as such is unjustifiable.

7. On several occasions during the past twenty years and more particularly in a paper read before this Societ three years ago, ample and convincing proof, clinical an statistical, was presented as to the claims and uniqu characteristics of the electro-cautery in the treatment c uterine cancer, and further observation has been mor than confirmatory of opinions then advanced.

8. Amputation of a cancerous cervix by the cauter knife is free from danger, a safeguard against all infection traumatic or septic, and, what is of still greater impor tance, it is destructive to latent cancer-cell proliferatio in tissues far beyond the line of incision, hence muc more is comprised in the operation than the mere re moval of a part or parts not more actively involved i the work of destruction.

9. Any method of operating for which advantages s vital and so far-reaching can be claimed and established and which thus distinguish it from all others, renders its adoption on the part of those who undertake to operate for cancer of the uterus no less than a moral obligation.

Vaginal Hysterectomy for Cancer of the Uterus.—Dr. H. J. Boldt, of New York, in a paper on this subject, devoted special attention to certain points in the operation, and to certain reasons why he preferred total extirpation to any form of partial removal. Regarding the method of operating, he expressed a preference for ligatures when it was possible to use them, but said that in certain cases he had found it convenient, if not absolutely necessary, to use clamps, and so far as his own statistics went, it would appear that the one method was as safe as the other. As to the form of suture, he had persistently used catgut for several years, and, with Dr. A. P. Dudley, had been the only consistent advocate of this material. He considered silk ligature in this operation a nuisance. It prolonged convalescence and could not be rendered more nearly antiseptic than catgut, while with care the latter could be tied quite securely. He impressed the necessity for keeping well outside the diseased tissue. One or two years ago he held the view, which was yet entertained by some, that it was advisable to operate even though one could not remove all infiltrated

sue, but further experience had led him to abandon this actice. The patients did not live so long as if the eration had not been performed, their suffering was ater, there remained some discharge and some hemorrge, which might be profuse. In short, the patients were rse than if total extirpation had not been done. It uld not be forgotten, however, that an apparent malig- nt infiltration causing immobility of the uterus might in lity be due to a previous simple inflammatory exudate that event he would not hesitate to remove the entire rus, although it might be immobile. In this country, n in large cities, not more than fifteen per cent. of all ses of cancer of the uterus that reached the surgeon re suitable for total extirpation of the uterus. It was be hoped that general practitioners would learn to rec- nize the disease earlier.

Regarding operations by partial ablation in cancer of uterus, he quoted a number of cases in current litera- e in which it was found that a nidus of disease in the vix, the only apparent pathological condition before irpation, was separated from disease in the body of the gan by an isthmus of healthy tissue. Because of the im- ssibility of saying before one had the entire uterus in his nd that the body of the organ was not involved as well the porta, he thought he would do hysterectomy in all ses where the extent of the disease did not contra-indi- e it. It was true, the president had advanced some ighty arguments in favor of the electro-cautery, but e author was not yet convinced.

Supra-vaginal Hysterectomy, with Sub-peritoneal eatment of the Stump without Ligature, in Operations Uterine Fibro-myomata.—Dr. B. F. Baer, of Phila- lphia, said it was his object in bringing this paper be- e the Society to call attention to a new management of e cervix in supra-vaginal hysterectomy. If the method uld prove as successful in the hands of others as it had his own it would grow in favor, for he had had nine con- utive cases, all of which recovered. Since writing this, wever, he had had a tenth case, which resulted fatally; t for this result, as he went on to show, the method of erating could not at all be held responsible. A part of e paper was devoted to the consideration of the reasons ich had led different operators to abandon abdominal ation of the stump and for resorting to various modes procedure.

Dr. Baer's operation resembled more nearly that of r. Goffe and Dr. Dudley than any other; yet he said ere was the greatest difference between them, and he ped the two would not be mixed in the minds of his arers.

He operated preferably with the patient in the Trende- nburg posture. The first step after opening the abdomen as to throw a silk ligature around the broad ligament on e side, after which the tumor, etc., were to an extent parated from the uterus. The same step was taken on e opposite side. The knife was then run lightly around e uterus an inch or two above the peritoneal reflection the bladder in front and a little lower behind; the ritoneum was stripped down by the handle of the alpel to make flaps. The next step was to ligate the erine arteries close to the cervix. The organ was then nputated at the cervix, leaving none of the supra-vaginal rtion. When the cervix was dropped it receded deeply to the pelvis and was covered over by the peritoneal ps, which usually were not sutured together. Not a ngle ligature or suture was put into the cervix, which as an important feature in Dr. Baer's operation, as ereby all occasion for sloughing, which had sometimes llowed from a constricting ligature or suture in the other eration, was avoided. In his cases there had been no emorrhage, no sloughing, practically no rise in tempera- re, and no untoward result whatever. He did not uterize the cervical canal. Death in his tenth case took ace in thirty-six hours after the operation and was due the action of the anæsthetic, aggravated by a large itre.

Supra-vaginal Hysterectomy for Uterine Fibroids; Report of Seventeen Cases.—Dr. William M. Polk read the paper. The seventeen cases represented different methods of dealing with the stump, and while the result was not against any one of those tried, yet that described below had finally been adopted. Two of the patients had died. He had also performed supra-vaginal hysterectomy for procidentia in four cases, making in all twenty-one.

The usual incision was made in the linea alba, extending it well down to the symphysis. The ovarian vessels were then tied in position, the first ligation being made, if practicable, outside the ovary. A ligature or forceps was then applied about the same vessel well up against the uterus to provide against the return flow. The upper part of the broad ligament and round ligament were next tied, next the ovarian vessels were divided between the ligatures, and the uterus was cut free from the round ligament and broad ligament well down to the base and lifted from its bed. If the tumor was large and unwieldy, a rubber ligature was thrown around as low down as possible and the structure above cut away. If it were of reasonable dimensions, he proceeded at once to ligate the uterine vessel on each side, then cut the uterus away from the vagina. Now introduce four long catgut sutures, passing one through the anterior vaginal wall, thence to the edge of the peritoneum reflected from the bladder; another through the posterior wall and the cut edge of the peritoneum dissected from the back surface; one upon each side, placed so as just to bring the peritoneum together at the sides of the stump of the vagina, passing thence through the lateral vaginal wall. These sutures were each tied in position and then tied together in a knot which was thrust into the vagina, seized with a forceps and drawn well downward, thus turning in the peritoneal surfaces. The vagina was then washed out and packed with gauze, the packing resting against the inverted peritoneum in the majority of cases, but in some where there had been much handling of tissues, it might be extended between the folds. In this latter class of cases a glass drainage-tube was introduced to the bottom of Douglas's cul-de sac from above. The abdomen was then closed. The drainage-tube was removed in twelve to twenty-four hours, the gauze on the third day.

In procidentia he did not drop the stump, but attached it to the abdominal walls to avoid the possibility of prolapse.

Can We Prevent Secondary Hemorrhage After Ovariotomy?—Dr. H. T. Hanks, of New York, discussed this subject in a brief paper. That it was worthy of consideration was evident from the fact that even today good surgeons occasionally had hemorrhage after ovariotomy. He had himself had two cases; in one the patient died, and in the other he was able to save her life by reopening the abdomen and securing the point of hemorrhage. It was necessary also to resort to transfusion. Three years earlier he had seen two cases in the practice of a friend, in one of which he himself reopened the abdomen, transfixed the pedicle, employed a saline solution, and saved the patient's life. He had known of no fewer than ten deaths from this accident within the last five years. Could, then, rules be formulated for its prevention? This question was especially worthy of consideration by the younger members, who might have judged from their work that there was but one way of fastening the pedicle. The same procedure should not be practised where the pedicle was wide and flat as where small and round.

Where the tumor was large, after ligating the large artery and tying it as tightly as possible, quilt the broad pedicle in and out so that under no circumstances could the silk slip. In smaller pedicles, discover the artery if possible before transfixing, and pass a transfixing needle to one side of it and tie thoroughly. In other words, in small pedicles, be sure not to split the artery or tear the pedicle by too much traction in tightening the ligature.

In removal of the diseased tubes and ovaries, if diseased, and embedded in old adhesions, there would be only small arteries to deal with, and almost any well-tied ligature would hold. He advocated no special ligature; either silk or catgut would do, but should be quite aseptic. If catgut were employed, make the first part of the knot with one turn, the second part with two turns.

The Value of the Forceps in Complicated High Arrest of the Breech, with Report of Two Cases—Dr. Edward Reynolds, of Boston, in a paper on this subject justified the conclusions by the recital of two cases of a rather rare condition, namely, arrest of the breech at the superior strait, complicated by dangerous retraction of the uterus.

The first patient had been in labor thirty-one hours, with no progress the last four hours. Immediate interference was thought to be indicated. Under ether the os was manually dilated, the lower segment of the uterus was found closely applied to the child and somewhat thinned. In view of the condition of the uterus it was thought that the passage of the hand above the constricting ring would be extremely difficult and dangerous, therefore the application of the forceps to the breech was adopted. The Vienna forceps were selected, one blade was applied over the sacrum, the other over the posterior surface of the anterior thigh; axis traction-rods were added, and by two or three strong tractions the breech was brought into the pelvis. The forceps were then removed, but it being impossible to deliver the breech by traction with the finger, they were reapplied without rods, when with moderate traction the breech was brought to the vulva and delivered by the finger. Without the forceps, delivery could have been effected only by withdrawing a leg, which would have endangered rupture of the uterus. The child died the fourth day, of convulsions, from hemorrhage at the base of the brain, but there had been no injury to the body internally or externally by the forceps application. The second case was similar; the child lived.

The special point made by the author was that, had the hand been introduced and the leg brought down, rupture of the constricting thin section of the uterus would have taken place; also that, if the forceps had been applied higher on the body of the child, as was commonly taught, some of the viscera would probably have been injured. The fingers should be repeatedly inserted to assure one that the blades of the forceps grasped at the proper place, which in the oblique position was, for one, at the first sacral vertebra, and for the other, upon the femur opposite; and in the transverse position, at the great trochanter.

What is the Best Management of Occipito-posterior Positions of the Vertex?—Dr Chauncey D. Palmer, of Cincinnati, said he had, in this paper, nothing new to offer, but he hoped to offer a rational plan of procedure in occipito-posterior presentations of the vertex. Intelligent treatment of cases of this position implied, of course, a consideration of the mechanism of labor. The author thought only four positions of the vertex need be recognized. A true posterior position was one in which the occiput was not only toward the sacro-iliac synchondrosis, but in which it impinged against the posterior inclined pelvic plane, just as an anterior position was one in which the anterior inclined pelvic plane received the occiput in its downward movements. If the occiput struck the anterior plane its direction would be downward, inward, forward, and outward; if the posterior, its direction would be downward, inward, backward, then outward. Many causes contributed toward directing the occiput on the anterior rather than on the posterior planes, among them being a strongly projecting sacral promontory, the ischial planes, the muscular pelvic floor, the ischiatic ligaments, the psoas-iliac muscles. Much misunderstanding had arisen from a misconception of what constituted an occipito-posterior position. As said, if the occiput played upon the anterior inclined plane, the case should be regarded as of the anterior positic not the posterior, notwithstanding the fact that the c ciput might look not inconsiderably backward. All su cases would naturally undergo, sooner or later, anteri rotation. If the occiput struck the posterior plane, oft it would undergo anterior rotation only on early, we directed efforts on the part of the accoucheur. N ure's forces, which greatly facilitated anterior rotatic were strong uterine action, aided by vigorous volunta propelling power, a good degree of resisting action at t pelvic floor (the site of rotation), and proper flexion of t fœtal head. Posterior rotation was likely to occur wh the occiput struck the posterior inclined plane well bac ward, when the head was of unusual size, when the isch spines were imperfectly developed, and when the pel floor was greatly relaxed. Posterior position meant sl engagement, slow descent, and a possible non-rotation, a posterior rotation. Flexion of the head after dilatati of the cervix was not complete or persistent. No spec difficulty occurred until the pelvic floor was reache Labor was longer, much greater force was require because the distance which the occiput had to travel w greatly increased; the shoulders and the whole of t fœtus became impacted into the pelvis outside of t uterus. While thus more *vis a tergo* was needed, less w afforded.

In diagnosis, the author said palpation of the abc men and auscultation were as important early as w vaginal touch, and should also be utilized during lab It was not always possible to estimate the degree of bac ward inclination of the occiput, or to say whether would undergo anterior or posterior rotation.

The treatment of most cases was simple, and wou depend upon the stage of parturition at which the con tion was recognized. If seen early enough, rotate t child into the anterior position. If not successful, p form podalic version. The latter operation was esp cially indicated if the head were large and hard, or t pelvis contracted. The knee elbow posture favored, w gravitation, rotation of the fœtus as a whole into the a terior position.

In the second stage, the lateral decubitus correspon ing to the direction of the posterior position, he thoug favored rotation. But if the head reached the perine without rotating, aim to promote and increase flexion l, with two fingers during pains, pushing the frontal bo upwardly, generally pressing toward the mother's le Or the whole hand might be used. The forceps mig still be necessary, rotation being left entirely to natu While the application of the forceps, done carelessly or t early, might prevent anterior rotation, causing extensi their use at this time was urgently called for. Betwe their use and the performance of craniotomy, the fute of this patient might rest. The mother exhausted a child dead, craniotomy offered the best chances for t mother. With the child alive most obstetricians wou very properly prefer the forceps. The author had rt endorsed the doctrine that craniotomy was never jus fiable on the living fœtus.

Drs. Grandin and Malcolm McLean believed t sad results of persistent occipito-posterior cases could obviated by recognizing malposition early, and rotati the child, body as well as head; or, possibly failing, ing version before the head engaged.

Umbilical Hernia in the Female, with Report of Five Cases.—Dr. A. Palmer Dudley, of New York, this paper gave a little space to stating some objectio to certain methods of operating for umbilical or vent hernia, particularly that of returning the parts without cising the peritoneum, as practised by Dr. Edebohls, a then related five cases which illustrated the method n adopted by himself, and which he thought possess certain advantages over the other methods. While was a firm advocate of catgut in most operations, here objected to placing reliance upon it for retaining in aptation the divided abdominal walls. Silver wire s

made use of to take the strain, while catgut was employed as a continuous suture for making closer approximation between the surfaces of the wound. The silver-wire sutures were passed through a small rubber cannula, which at the same time did away with the necessity for twisting them, and also served for drainage, and thus obviated the liability to suppuration. In all of his cases he had succeeded in securing union with almost entire absence of suppuration, and with no rise in temperature.

The fourth case was one of enormous ventral hernia, the cellular tissue greatly atrophied, the vermicular action of the intestines was visible through the skin, and it seemed hazardous to operate. An incision was made nine inches long; the omentum was adherent along the entire line of the incision, and a large portion of it had to be removed. After cutting out an elliptical piece of the walls they were drawn together as closely as possible and quilted by continuous catgut suture. They were so much atrophied that it was almost impossible to get sound muscular tissue to cover in the hernia. In addition to the two rows of catgut, seven wire sutures were employed. In spite of the fact that the patient was not expected to live, she made a good recovery without accident, except for slight suppuration about two wire sutures.

His case showed that it was useless to treat umbilical hernia by mechanical appliances. It was his opinion that to open the peritoneal sac was not dangerous, and he would prefer to do this to returning the sac without knowing how many adhesions there were between it and the intestine; this method of treating the scar did away with the necessity of leaving buried sutures; hernia would be less likely to follow laparotomy if operators would be less careless in closing the abdominal incision.

Stomatitis due to Irritation of Epithelial Pearls in the Mouth of New-born Children.—Dr. Henry J. Garrigues, of New York, said that a small epidemic of superficial ulceration of the palate of new-born children, in Maternity Hospital, was the occasion of a careful examination of all the babies, 52 in number; 49 of these had congenital epithelial pearls on the palate. The first 27 children had their mouths washed out immediately after birth, and after each nursing, with the velvety side of a piece of lint soaked in a saturated solution of boracic acid. Of these 12 had a more or less sore mouth, the ulceration always beginning at the epithelial pearls.

In the last 25 cases no washing was done, and not a single one of these got a sore mouth.

The epithelial pearls are small, white, globular tumors of the size of a pin-head to that of a millet-seed, situated in the raphē of the palate, preferably at the juncture of the hard and the soft palate. They are one to five in number. The outer surface is hard, the inner part softer. They are embedded in the mucous membrane. Most of them are covered with a layer of condensed connective tissue. Instead of the round prominence there is sometimes a white line half an inch long in the raphē.

The mass is composed of epithelial cells like those of the mucous membrane of the mouth. The outer layers are the youngest, having polyhedral form and a nucleus, those near the centre are flat and have lost their nucleus.

Similar formations are sometimes found on the free edge of the alveolar process.

Epithelial pearls are not retention cysts, formed by occlusion of glands, but are due to inclusion of parts of the epithelium of the mouth. They are found as early as the eighth week of fœtal life, and disappear in healthy children at the end of the second month after the birth of the child. In badly nourished children they persist longer.

They are found in that particular place because the palate is formed of two lateral projections which gradually unite in the median line, from the front backward.

On the alveolar process their existence is probably due to the growing together of the walls of the dental furrow over the germs of the future teeth.

Diagnosis.—Bednar's aphthæ are similar superficial ulcers, but begin laterally on the place corresponding to the hamular process of the sphenoid bone, and are usually bilateral. Sprue forms white spots, is never congenital, and attacks any part of the mouth irregularly.

Treatment.—The epithelial pearls being physiological, should not be interfered with. If the mouth is washed out at all it should be done with plain water, a soft, smooth rag, and with great care, so as not to wound the epithelium.

If stomatitis sets in by rubbing off the pearls, the best treatment of the ulcer is to swab it with water acidulated with a few drops of acetic acid, and then paint it with borax glycerine (℥ j.–℥ j.). It heals in a week or two.

Officers Elected.—*President*, Dr. Theophilus Parvin, of Philadelphia; *Vice Presidents*, Drs. W. H. Parish and W. H. Baker; *Secretary*, Dr. H. C. Coe; *Treasurer*, Dr. M. D. Mann; *Council*, Drs. B. B. Browne, A. P. Dudley, E. C. Dudley, and Willis Ford; *Honorary Members*, Drs. Robert Battey, of Georgia, and Morisani, of Naples.

Next meeting to be held in Philadelphia, on the third Tuesday in May, 1893.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending September 24, 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	64	19
Scarlet fever	52	7
Cerebro-spinal meningitis	0	1
Measles	24	2
Diphtheria	53	26
Small-pox	10	2
Cholera	2	2
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0

Hyperidrosis of the Hands and Feet.—A correspondent who has a patient with profuse sweating of the hands and feet, and who has tried various remedies without success, asks for the best means of curing the affection. It is difficult to say which is the best remedy when there are so many that are good, and none that is certain. For sweating of the feet among the soldiers of the German army, applications of a weak solution of chromic are employed. Hebra uses diachylon ointment, and Shoemaker recommends oleate of zinc with starch, salicylic acid, and bismuth, or naphthol and boric acid. Whitla has obtained the best results with powdered boric acid dusted on the feet after a bath, morning and evening, the socks also being impregnated with the same substance. Carbolic acid, lead, alum, tannin, corrosive sublimate, and many other antiseptic and astringent substances have been employed in lotion or ointment, with more or less success. Sulphonal, antipyrine, aromatic sulphuric acid, atropine, dilute phosphoric acid, ergot, and many other internal remedies have been employed for the relief of local sweating, but such methods are not to be recommended in most cases.

Tyndall on Phthisis.—Professor Tyndall is, without question, a scientist of the first rank, but he sometimes uses any but scientific arguments to support theories that are based on other and much more convincing facts. For example, in maintaining the contagiousness of tuberculosis, he asserts that "no investigation has proved that the mortality among physicians by phthisis does not far exceed the average." This may be true enough, but the proper argument to bring forward, if it could be brought, would be that the mortality among physicians by phthisis

does far exceed the average.' We do not believe that statistics would support this argument, although there are many unquestioned facts which appear to prove that the disease is communicable. Professor Tyndall should avoid the attempt to prove theories by hypotheses.

Two Thousand and Seventy-eight Persons die every week in London. During the influenza epidemic this number rose to 3,271.

Heat to the Epigastrium in Heart Failure.—Dr. W. L. Symes reports, in the *Dublin Journal of Medical Science* for September, 1892, a case of heart failure in which there was no pulse, no sound over his heart, no respiration; his eyes were glassy and fixed; he could not swallow; and severe slapping of the epigastrium had no effect. Having exhausted all available stimulants, and recollecting that he had read somewhere of the value of a hot spoon applied to the epigastrium in states of asphyxia or syncope, Dr. Symes took a hot lump of coal from the fire with the tongs, and applying it over the xiphoid cartilage once or twice, was gratified to find it produce powerful contractions of the inspiratory muscles. This was continued for some time, applications being made around the insertion of the diaphragm, until, by degrees, respiration returned, the patient's eyes opened, his heart beat, and the color came back to his face. He then took some brandy, and finally rallied.

Morphine Soirées are said by the London *Standard* to have become a recognized institution in certain Parisian circles.

The Sale of Medical Practices.—The Comitia of the Royal College of Physicians of London recently passed a resolution to the effect, "That this College regards the sale and purchase of practices, or the transfer of patients from one physician to another for a pecuniary consideration, among Fellows or Members of its body, as contrary to the traditions and practice of the College, interfering with the freedom of patients, and derogatory to the position of a physician."

One Hundred and Eighty Thousand Suicides occur every year among the civilized nations of the world; so says Dr. B. W. Richardson.

Railway Surgery.—There are said to be over six thousand railroad surgeons in this country, twelve hundred of whom are members of the Association of Railroad Surgeons. The attempt of the American Medical Association, or of any State Society, to discipline such a large number of men for practising under contract is, of course, certain to fail.

Microbes as Chemists.—In his address at the recent meeting of the British Medical Association, Mr. Herbert McLeod referred to the important part fulfilled by microbes as chemical agents. He pointed out that microbes are capable of producing chemical changes which surpass the results obtained by the chemist in his laboratory. It has long been known, for example, that the transformation of sugar into alcohol and carbonic acid in the ordinary process of fermentation is due to a living organism, and the transformation of ammonia into nitrous and nitric acids in the soil has also been shown to be due to the action of micro-organisms. It is possible to transform ammonia into these acids in the laboratory by oxidation under certain conditions and at a high temperature, but these organisms do the work quite as effectually at ordinary temperatures. The production of toxines by the alteration of some of the constituents of the animal body through the agency of micro-organisms, is another comparatively recent discovery, and one that will doubtless prove to be of the highest possible importance in respect to the prevention and cure of disease.

Rate of Change in the Human Body.—Sir Lyon Playfair says that the entire nitrogenous material in the body is changed in six weeks.

Malarial Fever in Tampico.—Dr. Antonio Matienz has published a memoir containing the results of a stud of malarial fevers occurring in Tampico, Mexico. In al the cases examined by him he found the hematozoon o Laveran in the blood of those suffering from the disease He also found the same organism in the blood of variou birds and of turtles which were apparently in a conditio of health.

Takes His Own Medicine.—"The physician," says ribald contemporary, "is the man who prescribes change and then takes all you have."

Getting her Diploma Under Difficulties.—A lady ha just taken her M.D. degree at St. Louis under circum stances of difficulty to which the inferior male creature fortunately for himself, can never be exposed. A fe weeks before the date of examination she presented he husband with a ninth "olive branch," and eleven day after the interesting event she was again in her place i the lecture-room.

A Death Sentence on Flies.—The police authorities c a town in Prussia are said to have issued a proclamatio against flies. The decree states that, inasmuch as fli contribute to the spreading of cholera, citizens are com manded to exert themselves to the utmost to destroy a flies within their houses. The proprietors of bee saloons are ordered to keep fly-catchers on their counter The penalty for not killing all the flies possible is a fir of $7.50 for each offence, and continued neglect t destroy them will be punished by imprisonment.

BOOKS RECEIVED.

A Primer of the Art of Massage. By Dr. Stret Dowse. 16mo, 151 pages, illustrated. John Wright Co., Bristol, England.

Guide Pratique pour le Traitement des Maladi de L'Oreille. Par le Dr. J. Baratoux. 12mo, 1 pages, illustrated.

Traité Élémentaire de Physiologie. Par J. Laborde. 8vo, 387 pages, illustrated.

Colotomy: Inguinal, Lumbar, and Transverse, fo Cancer or Stricture with Ulceration of the Lar Intestine. By H. W. Allingham. 8vo, 199 page illustrated. Baillière, Tindall & Cox, London.

Cancer of the Mouth, Tongue, and Œsophagu their Pathology, Symptoms, Diagnosis, and Trea ment. By F. B. Jessett. 8vo, 183 pages, illustrate Baillière, Tindall & Cox, London.

Transactions of the Medical Association Georgia. Forty-third Annual Session, 1892. 8 320 pages.

Transactions of the Thirteenth Annual Meeti of the American Laryngological Association, 18 8vo, 165 pages, illustrated.

The Surgical Treatment of Neuralgia of t Fifth Nerve. By William Rose. 8vo, 85 pages, ill trated. Baillière, Tindall & Cox, London.

Transactions of the Medical Society of t State of New York for the Year 1892. 8vo, 5 pages.

A Text-book of the Principles and Practice Medicine. By Henry M. Lyman, M.D. 8vo, 9 pages, illustrated. Lea Brothers & Co., Philadelph Pa.

A Manual of Oestetrics. By A. F. A. King, M. Fifth Edition. 8vo, 450 pages, illustrated. Lea Broth & Co., Philadelphia, Pa.

A Dictionary of Psychological Medicine. Edi by D. Hack Tuke, M.D. In two volumes. 8vo. V I., pages 1–722; vol. II., pages 723–1477. Illustrat P. Blakiston, Son & Co., Philadelphia, Pa.

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Original Articles.

SOME OBSERVATIONS ON THE VIABILITY OF THE CHOLERA BACILLUS.[1]

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DURING the autumn of 1886 and until the middle of 1887 I had opportunity to study the cholera bacillus at the Hygienic Institute in Berlin, which was then under the direction of Dr. Robert Koch. The work which he gave me to do was the comparison of cultures of different ages and from different sources. After completing that comparison I made a number of experiments to determine the length of time that the cholera bacillus would live when placed on various substances, and under various conditions; thinking that the results might be of some value in throwing light upon the way in which cholera might spread from place to place during an epidemic. These experiments I did not publish at the time, feeling that they were too fragmentary to warrant the deduction of any general conclusions as to the mode in which cholera spreads.

1. **In Agar-agar Cultures.**—On December 12, 1886, I received ten old agar cultures, from various sources, which had been prepared in 1885, and which had been reserved at the ordinary room temperature. From three of these cultures I succeeded in obtaining living cholera bacilli.[2] The cultures were started March 8, 1885, April 12, 1885, and June 5, 1885, respectively, showing that it is possible for the cholera bacillus to retain its viability in a single agar culture, without transplantation, for 681 days; one year, ten months and ten days.

Four agar cultures which had been in an incubator since February 19, 1885, were examined on January 3, 1886, in the same manner as the ten cultures already mentioned. Of these, one culture yielded living cholera bacilli—showing that cholera *may* live in agar culture 318 days at a temperature closely approximating that of the human body.

2. **In Fecal Matter.**—Four experiments were made with mixtures of fæces and cholera, and the mixture examined daily for living cholera bacilli. In no case were they found after the sixth day. The difficulty of finding the cholera bacillus in such a mixture increases with the age of the mixture, so that the failure to find them on a given day cannot be taken as proof that there are none present. When, however, as in these cases, a rapid diminution in the number present in equal bulks of the mixture examined from day to day is observed, and afterward, for a number of successive days, none can be found, the presumption seems reasonable that the bacillus gradually dies out and is no longer present in a living state soon after all efforts to detect it, fail.

The details of these four experiments are as follows: To two bouillon cultures of cholera in test-tubes large quantities of human fæces were added and, after thorough mixing, plate cultures were made in order to determine the relative abundance of cholera bacilli. It was found that the latter were relatively so numerous that the plate cultures resembled those made from a pure bouillon culture of cholera. Of these mixtures one was placed in an incubator at about 37° C., the other was kept at the temperature of the room. The mixtures were made March 25, 1887. On each succeeding day, for twelve days, plate cultures were made from the mixtures and the relative number of cholera bacilli determined. The mixture in the incubator showed an enormous decrease of cholera after twenty-four hours, and after forty-eight hours none could be found, although plate cultures were made twenty-five times, at nearly daily intervals, up to and including May 7th.

The mixture kept at the room temperature showed constantly diminishing numbers of cholera bacilli up to the seventh day, when none could be detected, nor could any be subsequently detected although the mixture was examined seventeen times up to and including April 26th.

The third experiment was similar to the second, except that a larger proportion of fæces was used. The results were identical (disappearance on seventh day), although the examination was repeated twenty times and extended to May 7th.

The fourth experiment was made without the use of bouillon; fæces, urine, and cholera from agar cultures being made up into a paste-like mass and kept at the room temperature. The experiment was started April 10th, and plate cultures made on that day showed the presence of considerable cholera. On the 11th no cholera could be detected, nor was any found on examining the mixture eleven times on nearly successive days up to April 26th.

Urine inoculated with large quantities of cholera from agar cultures and kept at the room temperature, exposed to the air, showed the presence of living cholera bacilli up to and including the fifth day. On the sixth, ninth, twelfth, and twenty-fourth days no cholera could be detected.

Stale urine, seven days after its passage, inoculated with cholera from agar cultures apparently killed the bacilli within twenty-four hours, nor could living cholera-germs be found on the third, sixth, or ninth day.

Dirty water from a settling tank connected with the drains of the Hygienic Museum inoculated with cholera from agar apparently killed within forty-eight hours, no living cholera being found on the second, fourth, sixth, ninth, or twenty-fourth days.

Sewage of neutral reaction collected at the Berlin City pumping station, inoculated with cholera from agar and kept at the room temperature, contained living cholera bacilli after twenty-four hours, but after forty eight hours none could be detected nor could any be found on the first, third, and sixth day thereafter.

3. **In River Water.**—Nine experiments were made, in which water from the river Spree was inoculated with cholera bacilli and then examined from day to day to determine the presence and number of cholera bacilli in known quantities of the water. The water was not sterilized[1] before the cholera was added to it, and the conditions of the experiment were varied with respect to the access of air, agitation, and addition of water fresh from the river. These modifications will best appear in the details given below. In no case could living cholera ba-

[1] Spirillum Choleræ Asiaticæ (Koch).

[2] Large portions of the agar cultures were placed in tubes containing sterile bouillon and the latter placed in an incubator. The three bouillon tubes which became cloudy were then examined by the plate method of culture and the characteristic colonies of cholera, and only these, found. These colonies were composed of motile comma bacilli, single and in S-shaped pairs. From these plates gelatine tubes were inoculated, and the subsequent growth corresponded exactly to that of the cholera bacillus.

[1] Experiments with cholera bacilli mixed with water previously sterilized by heat yield very different results, but do not represent conditions likely to occur in nature.

cilli be found after the sixth day. These results must, of course, be taken with the same allowance as those derived from the experiments with fecal matter.

In addition to the above nine experiments, eight similar ones were made with the addition of fresh-water plants (chiefly *Elodea canadensis*) taken from one of the ponds in the Thiergarten. These last experiments were failures, owing to the presence of large numbers of a rapidly liquefying bacillus, which destroyed the plate cultures before any colonies of the cholera bacillus could have time to develop sufficiently for detection, even with the aid of the microscope.

The cholera used for these experiments with water was lightly scraped from the surface of agar where it had grown at the body temperature for about twenty-four hours. Agar cultures were selected in order to avoid introducing much nutrient material into the water along with the cholera bacilli. Five hundred cubic centimetres of Spree water was inoculated with large quantities of cholera and placed in a tall glass cylinder, which had previously been rinsed repeatedly with the water alone. The column of water in the cylinder measured about seven and one-half inches (19 ctm). A fine, continuous stream of air was forced through a glass tube to the bottom of the cylinder, so that the bubbles as they rose kept the water in constant motion and well supplied with air. This experiment was made in duplicate, and the results may be tabulated thus:

	Experiment No. 1.				Experiment No. 2.			
A	B	C	D	E	B	C	D	E
	Cubic ctm.			Per cent.	Cubic ctm.			Per cent.
1	0.02	267,300	13,365,000	100	0.005	48,960	9,792,000	100
2	0.04	153,120	3,828,000	28.64	0.02	48,988	2,449,400	25.01
3	0.1	52,920	529,200	3.96	0.01	86,184	8,618,400*	88.01 [8.89]
4	0.04	13,608	340,200	2.54	0.1	259	2,590	0.026
5	1	352	352	0.0026	0.2	110	550	0.0056
6	1	126	126	0.00094	2	20	10	0.00001
7	2	None	None	0	....	None	None	0
8	....	None	None	0	....	None	None	0
9	....	None	None	0				

* Probably an error in placing the decimal point. Instead of 0.01 c.ctm. there was probably 0.1 c.ctm. taken.

Column A gives the number of days which had elapsed since the cholera was introduced into the water; B gives the amount of water taken for examination; C gives the number of living cholera bacilli estimated to have been in the sample taken (really the number of cholera colonies on the plate); D, the corresponding number of cholera bacilli for one cubic centimetre of the water; and E, the percentage present as compared with the number after the mixture had been agitated for twenty-four hours, taken as a standard for comparison.

The third experiment was like the foregoing, but much less cholera was introduced into the water, it seeming possible that there might be substances produced in the mixture which interfered with the vitality of the cholera bacillus. The calculated number of living cholera bacilli per cubic centimetre were as follows: After twenty-four hours, 6,006; forty-eight hours, 1,560; seventy-two hours, 140; four days, none; five, six, seven, and eight days, none.

The fourth and fifth experiments differed from the three earlier ones in that there was no air passed through the mixture of water and cholera. The figures per cubic centimetre are: Fourth experiment—After twenty-four hours, 7,872,400; forty eight hours, 3,550,800; three days, 617,670; four days, 4,600; five days, 700; six and seven days none. Fifth experiment—Twenty-four hours, 1,940; forty-eight hours, results lost through too high room temperature; three days, 79; four, five, six, seven, and eight days, none.

Thinking that perhaps the addition of fresh water from day to day might increase the chances that cholera would maintain itself in the water, experiments similar to all the foregoing were made, with the modification that after the first forty-eight hours, one-fifth (=100 c.c.) of the water was removed daily from the cylinder, and an equal bulk of water fresh from the Spree was added. Four such experiments were made.

The details of these experiments follow.

Experiment 6.—Spree water inoculated with cholera from agar culture. Subjected to continuous stream of air. Started April 25, 1887. April 26th, cholera bacilli per c.c., 4,926,900. April 27th, cholera bacilli per c.c. 1,558,400; 100 c.c. replaced by fresh Spree water. April 28th, cholera bacilli per c.c., 196,000; 100 c.c. replaced by Spree water. April 29th, cholera bacilli per c.c., 1,450; 100 c.c. replaced by Spree water. April 30th, cholera bacilli per c.c., 25; 100 c.c. replaced by Spree water. May 1st, no cholera in 2 c.c.; 100 c.c. replaced by Spree water. May 2d, no cholera in 2 c.c.; 100 c.c. replaced. May 3d, no cholera in 2 c.c. Experiment discontinued.

Experiment 7.—Similar to foregoing in every particular with the single exception that no air was passed through the water. The experiment was started the same day. The corresponding figures are: April 26th, 13,038,640; April 27th, 4,286,500; April 28th, 1,799,200; April 29th, 7,200; April 30th, 185; May 1st, 2d, and 3d, none.

Experiment 8.—Similar to Experiment 6, but less cholera introduced into the water. Started April 25th; April 26th, 6,804; April 27th, 1,610; April 28th, 29th, 30th, May 1st, 2d, 3d, none.

Experiment 9.—Similar to Experiment 7. Started April 25th; April 26th, 1,086; April 27th, 96; April 28th, 29th, 30th, May 1st, 2d, 3d, none.

In all the experiments with Spree water the number of bacteria not cholera which were present was often very great; sometimes as many as 400,000 being present in 1 c.c.

During April, May, June, and July, 1887, I made a number of experiments to determine how long cholera when placed upon a variety of substances would retain its vitality. These may be briefly detailed as follows:

4. **On Textile Fabrics.**—No. 1. Flannel soaked in blood-serum mixed with cholera from an agar culture. Kept in lightly covered glass dish at the room temperature. Examined almost daily, by means of plate culture, for sixteen days. Living cholera found up to and on the ninth day; after that a contamination with rapidly liquefying bacteria rendered the examinations negative.

No. 2. Similar to No. 1, but old sheeting used in place of the flannel. Living cholera found on twelfth day; none found on 13th or 16th. Contaminating bacteria increased in number progressively from the beginning of the experiment, and rendered the detection of the cholera more and more difficult. The latter undoubtedly diminished in number after the first few days.

No. 3. Old sheeting soaked in soapy water (five per cent. of a saturated solution laundry soap added to tap-water). After drying dipped in bouillon containing cholera from an agar culture. Part of the cloth in loosely covered glass dish. Living cholera found after forty-eight hours. None on the sixth or seventh days. Other portions of the cloth exposed to rapid drying in the air. No cholera after forty eight hours and seventy-two hours. These experiments were repeated four times with identical results.

5. **On Fruits, Vegetables, etc.**—No. 1. Lettuce leaves soaked in bouillon containing cholera from agar culture. Lightly covered dish; room temperature. Living cholera found up to and including fifth day; none on sixth and seventh days.

No. 2. Cauliflower, cooked; similar to No. 1. Living cholera found on sixth day. Material exhausted.

No. 3. Same as No. 2. Living cholera found up to and including tenth day, when contaminating bacteria became so abundant as to prevent detection of cholera.

No. 4. Same as No. 2, except that the specimen was kept in an ice-box (average temperature 8° C.). Living cholera present up to and on the thirteenth day. Experiment stopped by contamination.

No. 5. Raw cauliflower. Lightly covered; room temperature. Living cholera on thirteenth day. Contamination.

No. 6. Raw cauliflower. Ice-box. Living cholera on fourteenth day. Contamination.

No. 7. Cooked cauliflower. Incubator, 36° C. Living cholera on third day. Contamination.

No. 8. Sliced cucumber. Lightly covered; room temperature. Living cholera found up to and on twenty-first day. None found on the twenty eighth day. Specimen used up.

No. 9. Similar to No. 8, but slice exposed to free circulation of air; room temperature. Living cholera found after forty-eight hours. None on third and fourth days.

No. 10. Green surface of a cucumber painted with a twenty-four hour bouillon culture of cholera, exposed freely to the air. After twenty-four hours surface was dry and wrinkled, no living cholera found No living cholera after forty eight hours.

No. 11. Cut surface of strawberry inoculated from agar culture. Lightly covered; room temperature. No living cholera after twenty-four and forty-eight hours.

No. 12. Strawberry dipped in bouillon culture. Lightly covered; room temperature. No living cholera after twenty-four, forty-eight, seventy-two hours.

No. 13. Raw onion, sliced. Lightly covered; room temperature. Living cholera found after twenty-four hours. None after forty-eight and ninety-six hours.

No. 14. Raw tomato sliced. Lightly covered; room temperature. Living cholera found after twenty-four hours. None on third day.

No. 15. Hot-house grape inoculated from agar culture. Living cholera found after twenty-four hours. None after forty-eight hours.

No. 16. Broken surface of a peach painted with bouillon culture of cholera. Living cholera found after twenty-four hours. None after forty-eight hours.

No. 17. Outside surface of a peach painted with cholera bouillon. Lightly covered; room temperature. Living cholera found after twenty-four and forty-eight hours. On third day the peach was covered with an abundant growth of mould.

No. 18. Duplicate of No. 17. Living cholera after twenty four hours. None after forty-eight hours.

No. 19. Same as No. 16, except that the fruit was freely exposed to the circulating air. Living cholera found after twenty four and forty-eight hours. None on third day. This experiment was duplicated three days later and living cholera found after twenty-four hours, but none after forty-eight hours.

No. 20. Greengage painted with bouillon culture. Exposed to the air; room temperature. Living cholera after twenty-four hours, none after forty-eight hours.

No. 21. Cut surface of apple inoculated from an agar culture. Lightly covered; room temperature. Living cholera after forty-eight hours, none after seventy-two hours.

No. 22. Raw cabbage. Cut surface washed with bouillon culture of cholera, exposed to air; room temperature. After twenty-four hours fifty per cent. of bacteria present were cholera; after forty-eight hours there were very few cholera bacilli living. On third day none were found alive.

No. 23. Similar to No. 22, but lightly covered. After twenty-four hours thirty per cent. of the bacteria were cholera; after forty-eight hours, twenty per cent.; after seventy-two hours, fifteen per cent. On the fourth day none were found.

No. 24. Cooked cabbage, moistened with bouillon culture of cholera, exposed to air; room temperature. After twenty-four hours, abundant living cholera bacilli; after forty-eight hours, a few; after seventy-two hours, none.

No. 25. Similiar to No. 24, but lightly covered. Up to and including the third day numerous living cholera bacilli were found. On fourth day the contamination with other bacteria was so abundant that the experiment had to be discontinued.

No. 26. A raw cabbage-leaf was painted with a bouillon culture of cholera and then inverted over another leaf but otherwise exposed freely to the air. Room temperature. Up to and including the third day living cholera was found in progressively diminishing quantities. On the fourth day none was found.

The foregoing observations show, that while most of the substances upon which the cholera bacillus was placed cannot be regarded as media suitable for the indefinite maintenance of the life of the bacillus they were not so unfavorable to its existence that they might not readily serve as vehicles for the distribution of the germ. It appears that the most destructive influence is exerted by other bacteria, which take possession of the substratum to the exclusion of the cholera bacillus. But by the time this has taken place such substances as are articles of food would no longer be regarded as fit for consumption.

ABDOMINAL SECTION FOR DIAGNOSTIC PURPOSES.

By CLINTON CUSHING, M.D.,

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In the excellent book of J. Greig Smith, on "Abdominal Surgery," he says, in speaking of exploratory incisions of the abdomen: "No incision ought to be merely exploratory. The exploratory incision of the skilled surgeon is widely different from that of the tyro. Where the former will make a correct diagnosis in ninety-nine out of a hundred cases, the latter will fall over his tenth case."

However skilful the surgeon may be I do not believe he can make an accurate and correct diagnosis in more than nine out of ten cases of abdominal disease by any method of external examination, if we leave out of consideration cases of ovarian cysts and uterine fibroids. Therefore, I think that the author quoted is in error, and that his quoted statement should not be allowed to stand unchallenged.

In spite of the fact that great progress has been made in later years, there still remain a considerable number of cases of abdominal disease of a serious character, upon the nature of which equally skilful and intelligent surgeons will disagree. This statement applies to cases of obstruction of the bowels, to disease of the vermiform appendix, to affections of the liver and gall-bladder and of the kidneys, and to pus collections in any part of the abdominal cavity.

The real facts in many cases of ruptured extra-uterine pregnancy are only clearly made out at a post-mortem examination. Exploratory incision is looked upon by Mr. Smith as a serious operation followed by a trying illness. In my hands it has not proven so; the serious part is the disease that warrants the operation, and not the operation itself, for with due care and cleanliness there is not one chance in a hundred that any bad result will follow the opening of the peritoneal cavity for the purposes of diagnosis.

I would not have it understood that I am an advocate of careless or reckless work, but where the symptoms are grave and growing steadily worse, and the life is at stake, if the symptoms point to some obscure disease of the abdominal cavity there should certainly be no hesitation in clearing up all doubts by an exploratory incision, if there be strength and vitality left to withstand the slight shock that attends the opening of the peritoneal cavity. During the past few years a number of cases have come under my observation that warrant me in these opinions, and I select from among them a few typical ones by way of illustration.

Case I.—In November, 1888, I was asked to take charge of a lady from Austin, Nev. She was twenty-seven years of age; two children, youngest four years of

age. She had suffered for many years a good deal of pain in region of ovaries and uterus, and when I first saw her was confined to bed and had a temperature of 102° F. The symptoms were those of a mild attack of pelvic peritonitis, but a careful bimanual examination showed the pelvic organs to be freely movable, although tender to the touch. The uterus was retroverted. Under the use of opiates, rest, and hot water vaginal injections, and the free use of quinine, the symptoms mended, and at the end of a month the temperature was normal and she was allowed to get out of bed. The digestion was poor and she complained of a feeling of distress in region of stomach and liver. At the end of ten days the fever returned with increased violence, and the repetition of the treatment gave only negative results. Manifestly I had to deal with some serious malady, the nature of which could not be clearly made out. She was now much emaciated, and I advised an exploratory incision, giving as my reason that there was probably a small collection of pus in one or both Fallopian tubes.

Professor L. C. Lane saw the case in consultation and agreed with me as to the propriety of the abdominal section, and the operation was done on January 31, 1889. Upon opening the abdomen the tubes were found to be normal. I then enlarged the incision and introducing the whole hand began a systematic examination of all the abdominal organs. Finally I discovered on the under side of the liver a hard, rounded tumor firmly fixed, about the size of a turkey's egg. While manipulating it between the thumb and finger I found movable masses within, and at once concluded that I had to deal with an enlarged and an inflamed gall-bladder filled with gall-stones. I at once sutured the retroverted uterus to the anterior abdominal wall and closed the incision in the abdomen. I then laid open the abdomen by a free incision near the lower border of the ribs, and with the finger-tips loosened the adhesions of the gall-bladder from the surrounding structures, and drew it up and stitched it to the edge of the abdominal wound, laid it open, and removed a small handful of biliary calculi, leaving in the viscus a small drainage-tube for one week. The improvement was remarkable; the pain and fever immediately left her, and in six weeks she had regained her normal weight. A small biliary fistula remained for three months, which healed at once upon removal of another gall-stone which had been left in the bladder at the time of the operation, or had worked its way down from the ducts subsequently. The gall-bladder contained also purulent matter, and this, together with the local peritonitis, was doubtless the cause of the fever. The only symptom that would lead to the suspicion that such disease existed was the indigestion and the sense of uneasiness and pain in the region, but this was no greater than is often seen in those who have suffered from habitual dyspepsia. The external examination gave no clew, for the gall-bladder was firmly fixed high up under the border of the liver. One year after the operation the uterus retained its normal position and she remained in good health.

Case II.—Mrs. W. F——, aged twenty-four; one child, one abortion. Came to San Francisco from Honolulu in the summer of 1891, and for three months was under the care of two competent medical gentlemen, who treated her for some obscure and painful affection of the pelvic organs. But little good attended their efforts, and I was asked to take charge of the case. Upon examination the abdomen was found to be distended with gas and very tender on pressure. The uterus was moderately fixed, retroverted, and sensitive to the touch, cervix slightly lacerated, bladder irritable, and urination painful. Temperature, 105° F. A purge of ten grains of calomel was given, which acted freely, but without relief to symptoms. Manifestly there was some serious trouble in the abdominal cavity, probably a pyo-salpynx, and an exploratory incision was advised, and after setting forth the facts in the case, the plan was agreed to and the patient was removed to my private hospital and the abdomen opened. It was then found that the patient was suffering from general peritonitis. The vermiform appendix was enlarged, contained several small particles of hard fecal matter the size of small peas, and two openings or ulcerations existed extending from the cavity of the appendix into the peritoneal cavity. The appendix was slightly adherent to the adjacent structures by bands of lymph. The right Fallopian tube contained two ounces of pus. The appendix and Fallopian tube were ligated and removed, the abdomen washed out with hot water and a drainage-tube left in forty-eight hours. Recovery was uninterrupted, and she returned to her home on the twenty-first day following the operation. In this case there was no suspicion of disease of the appendix before the exploration, and had the operation been delayed she would doubtless have died promptly, whereas from the moment of opening the abdomen I was master of the situation and recovery was at once almost a certainty.

Case III.—On November 16, 1891, I saw, in consultation with Dr. B. F. Clark, a woman twenty one years of age, one child and one miscarriage, who was suffering from some obscure and painful disease of the abdominal cavity following an attack of pelvic peritonitis. From the history, symptoms, and examination it was concluded that it was a case of pelvic abscess, such a case as in former years I would have punctured through the roof of the vagina, but it was decided to make an exploratory incision and clear up all uncertainties. On the following day the plan was carried out, and in addition to a double pyo-salpynx we found near the umbilicus a mass the size of the closed fist, consisting of omentum and small intestines firmly aglutinated together. I began cautiously to break up the adhesions and dissect the various layers apart with my finger-nails, and in the centre of the mass I came upon an abscess containing two ounces of ill-smelling pus, the walls of which were gangrenous in appearance. The tube and ovaries were removed and the parts thoroughly washed, a drainage-tube inserted for three days, after which recovery was uninterrupted. In this case any procedure short of abdominal surgery would have been of little use.

Case IV.—On June 15, 1892, I was asked by Dr. Myers, of Union Street, to see a case with him. She was twenty-seven years of age, had been married ten months, and eight days before I saw her had suffered a miscarriage of six weeks' pregnancy. Following the abortion, fever developed, and when I saw her, her temperature was 104½° F. She was bathed in perspiration, the abdomen greatly distended, and the suffering intense. The expression of the face was the peculiar pinched, anxious look so familiar to those who have much to do with cases of abdominal surgery. Upon examination it was found that a large solid tumor of the size of a child's head occupied the pelvic cavity. An offensive discharge was escaping from the os uteri, and the uterine cavity measured six inches. An important question at once presented itself: Was the woman suffering from septicæmia due to absorption from a decomposing placenta, or had she already a general peritonitis from extension of disease along the Fallopian tube into the peritoneal cavity? If the former, the curetting of the uterine cavity might prove of service; if the latter, it would do no good. An exploratory incision was decided upon, and the following day I opened the abdomen, and at once found purulent general peritonitis and a large, sloughy looking uterine fibroid. During the examination pus was seen flowing freely into the peritoneal cavity from the free opening of the Fallopian tube. I at once tied off the broad ligaments, ligated the uterine arteries, removed the tumor, tubes, and ovaries, leaving the stump of the cervix closed in by flaps and a whip-stitch of cat gut after the method of Schroeder. The abdominal cavity was washed and drained, the temperature at once went down to 100° F., and there was but little shock.

The recovery was uneventful, except that the abdominal

ound did not unite, owing to the infection during the peration by the purulent discharge, and that in order to cure more perfect drainage on the fifth day I passed a bber tube from the abdominal wound through the stump the cervix into and out of the vagina. The patient as out of bed in five weeks, and walking about a week ter, having gained very materially in weight during her nfinement to bed.

With these facts before us, can there be any question the mind of any intelligent surgeon of the proper course pursue? Certainly, courage and prompt action are cessary if good results are to follow.

On July 26, 1892, an Italian woman, twenty years of e, was brought to my private hospital in a greatly ema- ated condition. Her temperature was 102° F., and pulse o. She had borne one child two years before.

Eight months before I saw her she had an attack which om the history I should judge was pelvic peritonitis, ce which time there had been steadily failing health d progressive emaciation, accompanied with much ab- minal pain, fever, and profuse perspiration. She had en having for several weeks a discharge of pus daily m the rectum.

A bimanual examination showed the pelvic organs nly fixed and tender, the abdomen not distended, and marked thickening at any point that would indicate a cumscribed pus collection.

With the assistance of Dr. B. F. Clark the abdomen s opened on the following day, and we found the peri- eum enormously thickened. The moment the cavity s opened a gush of pus occurred, and this was followed the discharge of fully three quarts of yellow and mous pus of very fetid odor. The sac was now washed with several gallons of hot water and the whole sur- e mopped over with a mixture of equal parts of com- nd tincture of iodine and carbolic acid.

An examination showed that the pus cavity extended m Douglas's pouch to the ensiform cartilage. No pelvic abdominal organs were anywhere in sight, all being ied in lymph and pushed in every direction by the roaching pus sac. Two drainage-tubes were fastened and every twenty-four hours the cavity was thoroughly hed out with a half-ounce of compound tincture of ine to a gallon of hot water. Rectal injections of skey and milk, and five grains of quinine every five rs administered by the mouth, produced a marked ect.

At this writing convalescence is fully established, with ry prospect of return to health. Had tentative sures been employed here, or some imperfect system drainage, I believe the result would have been disas- is.

There was no way of learning from the external ex nation of the great extent of the disease, and the der is that any human being could carry about such a dful load of filth and live.

t might be said that the cases reported are exceptional. nswer I would say that similar cases are coming under observation constantly, and every year adds strength he conviction that in properly selected cases explora- incision of the peritoneal cavity is one of the most uable additions to surgery that has been made in later s, and that when a patient dies after an abdominal ion the fault lies with the disorder that warranted it, not with the operation, providing, of course, that the ical work has been done properly and with strict ob- ance of cleanliness.

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nture of the Lung has been carried out by Dr. Germonprez in a man of eighteen, whose pleura had n opened for a pyoneumothorax, and had been fol- d by a persistent broncho-pleural fistula. Portions x ribs were removed and the orifice of the fistula sutured with catgut. The patient made a slow re- ry, but finally was able to resume work.

TREATMENT OF CHRONIC ENDOMETRITIS.[1]

By S. L. ELSNER, M.D.,

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UNTIL within about ten years ago our knowledge of the pathology of chronic endometritis—to say nothing of its treatment—was indeed meagre. Even in our larger hospitals no local treatment was carried on above the internal os. Everything of a catarrhal nature had its seat in the cervix, ulcerations were entirely local, and cervical catarrh a constitutional disorder requiring only tonic treatment. In fact, the uterus was not lined by mucous membrane in those days, and, naturally enough, was not to be treated as the mucous membrane of other cavities. We now know, however, that there is epithelium in the lining of the uterus, that it contains glands, and that these glands perform the function of other mucous glands. Why, then, is it that to day we find good practitioners who will insist that the uterine canal should not be treated locally? Almost all who have been treating this mucous membrane have deemed it sufficient to apply alteratives and caustics by means of a cotton carrier, which on reaching the internal os was entirely robbed of any medicinal properties, all of the solution being left behind the internal os and cervical canal to be swabbed out afterward with dry cotton. Naturally a chronic endometritis, by such treatment, was rarely ever cured, and when benefited the result unquestionably depended upon the frequent dilatation and improvement in the general constitution.

This constant tinkering with the interior of the uterus is certainly bad gynecology, and your patient, after months of treatment, is very little benefited.

Cases of endometritis, to be successfully treated, must be radically treated, and this does not mean that you are to give local treatment for six months. Have your patient enter an institution or keep her bed at home, and after preparing her as you would for any operation, administer an anæsthetic, wash out the vagina with 1 to 3,000 bichloride, and the uterine cavity with one-half that strength solution. Dilate the uterine canal with a steel dilator, curette the entire mucous membrane, and after swabbing it out with carbolic acid or tincture of iodine, drain the cavity.

No one here present will doubt the advisability of draining an organ that very likely is containing decomposing discharges.

The question, however, is, How are we to drain this cavity? If you will be careful to dilate the entire canal and not only elongate the cervical portion, the rest is comparatively simple. In cases of endometritis complicated by enlarged subinvoluted uteri there is no question of gauze being the best possible drain. This should be carried well up to the fundus and the vagina packed afterward. If, however, your uterus is not enlarged by subinvolution or other causes, it may be best to use a curved drain with one or more grooves to allow the discharges to escape into the dressings below. I prefer the hard-rubber drain in cases where you have a small uterus, and especially if that organ is not in proper position.

If you use gauze in these cases, you will find it a hard matter to keep it in place. It will often be rolled out into the vagina and so defeat your object in draining. The stem, on the other hand, will be easily retained by its bulb and the vaginal tampon. You can expect the result of such treatment, in carefully selected cases, to be very gratifying, and, in the majority of cases, you will get a permanent cure.

In selecting your cases you must exclude such as have pelvic cellulitis or peritonitis, cases of endometritis depending upon new-growths, and also those cases in which you already have tubular involvement. To operate upon such as these would be throwing oil on an already burning fire.

The following histories, taken from my case-book, illustrate the successful treatment of four cases:

[1] Read before Monroe County Medical Society, May 25, 1892.

Case I.—Mrs. Z——. First consulted me on April 16, 1890; aged thirty six; married ten years. One child, a boy of nine. This patient always enjoyed good health until six months after her boy was born. She noticed first that her menstruation was irregular and that the amount of blood was too large. This was followed by general pains, loss of flesh and strength, pallor, at times severe backache and bearing down. Two years ago the flow began to last two and three weeks, and was accompanied by pain and fainting-spells. In other words, she gradually became a chronic invalid. At the time when I first saw her she had been flowing for seven consecutive weeks. I found her very anæmic and in bed. Examination showed nothing abnormal excepting endometritis with subinvoluted uterus. She was given ergot for a few days prior to operation, and then after gradual dilatation, which I no longer practice, on April 24, 1890, I curetted her uterus and packed the whole cavity with iodoform gauze. She reacted well from the anæsthetic and gradually gained strength. She was given tonics and no local treatment whatever. Her menstruation followed at regular intervals, and she felt herself very well—to use her own terms, "a new woman." She afterward became pregnant, but miscarried during the ninth week. Since then she has had no trouble aside from the grip.

Case II.—Mrs. J. C. M——. First seen May 3, 1891. Married nine years. Two children and two miscarriages, the first miscarriage, two years ago, was instrumental. The second, six months after, cause unknown to patient. Since her second miscarriage she has had constant backache, dysmenorrhœa, and profuse vaginal discharge, her general health failing, appetite poor, and bowels constipated. Examination revealed bilateral laceration of the cervix, uterus slightly retroverted, profuse discharge from uterus, with erosion of entire cervix. She was given a few local treatments and told that after her next period she must have an operation. I explained to her that the uterus was to be curetted, and that later I would do a trachelorrhaphy. I saw no more of this patient until December, 1891 (seven months later). Her condition was somewhat improved, but the local symptoms were the same. Upon examination I found that she had had the laceration repaired, and the result of that operation was good. I prepared her for operation, and on December 16, 1891, dilated, curetted, and drained the uterus, using a stem. She was confined to her bed for four days, and to her room for several days longer, when I removed the drain. She had little or no pain in January and none since.

Case III.—Mrs. H——, aged twenty-two; married four years; two children, youngest one year old. Health poor during pregnancy, but after confinement felt better until she menstruated, five months ago. Amount large, lasting ten days; pain in both sides; backache with bearing down; appetite fair; bowels regular. Vaginal discharge well marked. Examination showed bilateral laceration, endometritis, erosion of cervix.

On February 22, 1892, I sent her to the Homœopathic Hospital, where I dilated, curetted her uterus, and did a trachelorrhaphy at the same time. I drained this uterus with iodoform gauze, not having a tube at hand, and I found that it answered all purposes, for the drainage was good. I removed the dressing on the fifth day, and the sutures on the fourteenth day, discharging her from the hospital on March 5, 1892. She has had two normal menstruations since, and gained fifteen pounds in weight.

Case IV.—Mrs. S——. First seen March 20, 1892; aged twenty-four; married seven years; has two children. Last pregnancy, two years ago, was complicated by adherent placenta. Her trouble dates from this last labor. Complains of profuse discharge, pains in loins, and back, with dysmenorrhœa. Examination showed uterus slightly enlarged and very tender, uterine sound enters $2\frac{7}{8}$ inches; pain upon passing instrument; marked uterine discharge. Operation April 4th. Dilated, curetted, and drained, using stem drain. Last menses, April 30th, lasted four days, very little pain. Patient was out of bed during this period and feels very well.

To conclude, I will but say: Be aseptic. Dilate the entire uterine cavity, and not only the cervix; curette thoroughly. Use a little tact in preventing pelvic inflammation and you will be delighted with your results.

MYELITIS FOLLOWING FEBRIS CATARRHUS EPIDEMICUS.

By L. L. VON WEDEKIND, M.D.,

UNITED STATES NAVY.

This case, which has been under observation for about eight months, and which presents a striking example of the peculiar sequelæ of "la grippe," occurs in a young man, twenty-five years of age, a soldier by occupation, a farmer during his earlier life, whose family history is excellent, and who denies absolutely ever having had syphilis, nor are any evidences of heredity or acquired syphilis present. Up to the time of his admission to the hospital he had enjoyed perfect health, never having had any sickness which he can recall.

On January 4, 1892, he was admitted to the United States Naval Hospital, at Chelsea, Mass., suffering as with catarrhus epidemicus, and while under treatment for this affection he developed scarlatina.

On January 18th convalescence was established, and up to February 16th this continued uninterruptedly, with a gain in strength, weight, and appetite.

On February 16th and subsequently, upon the slightest exertion patient would complain of much weakness, pain in legs and back, occipital headache, and profuse perspiration. An examination at this time revealed nothing abnormal as to heart, lungs, or kidneys, though patient complained of a præcordial pain and a feeling of constriction in the left chest. This præcordial pain has continued up to the present time, with intermissions of longer or shorter duration.

On February 21st he became very nervous, his condition anæmic, he began having night sweats, suffered from insomnia, anorexia, and marked asthenia. His urine has been frequently examined, and on all occasions found to be normal. Constipation obstinate.

On February 29th he developed symptoms of gastric irritation, which up to the present remains; and on March 22d the abdomen, in the region of the stomach, became hyperæsthetic. This hyperæsthesia has never abated, but is now more pronounced and of greater area. Headache, both frontal and occipital, has been an almost constant symptom. Temperature, since the establishment of convalescence from his original illness, has run a normal course, with a day or two of subnormal registration. Pulse, 55 to 70. Pupils dilated. Extremities cold and of cyanotic appearance, with muscular paralysis slowly progressing. Patient frequently complains of numbness and a prickling sensation in the legs and arms.

The hyperæsthesia of the spot on the abdomen has gradually enlarged from the size of the palm of a man's hand to the size of the hand outspread, following from the point of starting (the ensiform cartilage) a course outward, downward, and backward, along the border of the ribs and below, on the right side. The skin here is so tender that the slightest touch, the most gentle manipulation, causes exquisite pain, which is not increased, however, upon pressure being applied to the parts beneath. A zone of anæsthesia surrounds this location entirely, and the line of demarcation is well pronounced. There is, upon each endeavor to speak, a twitching of the lips, so marked as to render almost indistinguishable what is said.

The patient is utterly unable to retain any solid food, nor has he, since March 22d. When given to him, he may retain it for a few moments, but it is then thrown off with no attendant nausea, no pain—simply vomited, and causing thereafter no further trouble. This appears to

be a truly reflex action, the food acting as a foreign body, and ejected as would be an irritating substance in the larynx.

The insomnia has been one of the most prominent symptoms, and is to day as marked as it was in the earlier part of the illness. The cord seems to be involved in several different places.

When taking into consideration the uncertainty of the etiology of myelitis and the absence of a syphilitic taint or any one of the enumerated exciting causes of myelitis found in medical works), the presence of the patient in the hospital before and at the time of the ushering in of the attack, and the fact of his having suffered shortly before from "la grippe"—these facts lead me to suppose that this latter disease has caused the present state of affairs, and that the poison of, or that producing, febris catarrhus epidemicus, involving the nervous system in many cases, as it undoubtedly does, may affect the roots of the nerves, exciting inflammation, or may extend inward to the central nervous organs themselves.

A CASE OF SCORBUTUS IN AN INFANT.[1]

By WALTER LESTER CARR, M.D.,

NEW YORK.

Scorbutus in infancy is rare, and it is not always diagnosed when present. That it is found in infants whose parents are able to provide all the necessaries of life was shown in the able paper read by our Chairman before the American Pediatric Society.[2] The history I present is that of an infant, aged fifteen months, to whom the mother, an intelligent woman, gave the food, day after day, which caused the scurvy.

The infant was brought from Paterson, N. J., to the Children's Class at Bellevue Hospital, Out-door Department, and was under the observation of my assistants, Drs. Purdy and Newhaus; Dr. J. Lewis Smith also saw the case. The mother of the little patient had kept a careful watch of the symptoms, and her narrative is incorporated in the record.

V. R. K——, female, aged fifteen months, first child. The baby was nursed until she was six weeks of age, when she was weaned, and fed condensed milk for six weeks longer, after which Mellin's food was used. This seemed to agree with her, though at first she did not like it, and the condensed milk was given in its place from time to time. The first lower incisors showed at eight months; the baby stood and walked with assistance two weeks later. During September, 1891, bowel trouble developed, which continued for some months and weakened the baby very much. The diet was kept the same. In November she refused to stand, and when placed on her feet she would fall. The following month, December, she became irritable, fretful, and did not sleep well. She appeared to have fever. Her legs were tender and sore, and she kept her thighs drawn up on the abdomen. When her clothing was changed she would scream as if in pain. After this condition had lasted about six weeks the baby extended her legs, but did not seem able to use them, although they were not so tender. On the legs were streaks and spots which looked like bruises, and in the centre of some of the purpuric patches were reddish dots that resembled pin pricks.

The movements from the bowels were as frequent as sixteen a day, and varied greatly in appearance. Sometimes the stools were green, then were black, or dark green, and again were natural in color. Often they contained a large quantity of mucus and were streaked with blood.

May 18, 1892, I first saw the baby, and my attention was called to the weakness of her legs. I found her to be a plump infant, with very little muscular strength, and a great deal of tenderness over the body, and especially of the thighs. She evidently experienced pain when handled, and would begin to cry before she was touched. The thighs had a swollen appearance, and were sausage-shaped, with some of the swelling below the knees. The lower thirds of the femurs felt thickened, and the thighs were exquisitely tender. There was not any heat in the parts. The sensation was good, but the muscular power was so weakened that the extremities could not be drawn up. There were no stainings nor discolorations. The abdomen was soft and distended. The liver and spleen were not enlarged. As the baby cried the gums were seen to be swollen and bleeding, with the teeth half-hidden by the softened alveolar tissue. The tongue was covered with a dirty, yellowish-brown coating, and with blood from the gums.

The anterior fontanelle was as open as is usually observed at fifteen months. Head moist. No craniotabes. No marked rachitic changes in epiphyses, or along the edges of the flat bones.

Examination of the chest showed the presence of mucous râles, some of which at the bases of the lungs were rather fine; but there was no dulness. Temperature in the rectum was almost 105° F.

The mother was ordered to stop the condensed milk, and to give the baby fresh milk, beef-juice, and the juice of an orange every day. No medicine except a placebo was prescribed.

After the visit of May 18th the baby had measles, accompanied by a severe attack of bronchitis. The high temperature noted was no doubt due to the onset of the acute disease. Under the change in diet the baby had made rapid improvement, and although ill with the measles the gums were better in three days, and normal by the end of a week.

June 21st was recorded: "Baby's general condition good. Some perspiration of the head and body. The muscles are not very strong, and there is a slight curvature of the spine, due to the want of muscular support. There is no tenderness of the thighs. Gums are all right. The stools contain a little mucus."

June 29th the mother sends word that the baby's bowels are much improved, and that she is gaining in strength and weight. She uses her feet and legs better than she had ever done before the illness.

The history of the case shows that there were not any puzzling symptoms, and the diagnosis was readily made.

I wish to call attention to the two features that were most prominent, and which should be looked for in all cases of the same character. These symptoms were the tumefied bleeding gums, which almost covered the teeth, and the tender, swollen thighs.

6 East Fifty-eighth Street.

[1] Read before the Section on Pediatrics of the New York Academy of Medicine, October 12, 1892.

[2] Scorbutus in Infants, American Cases. By William Percy Northrup, M.D. Transactions of the American Pediatric Society, 1891.

Treatment of Burns.—Dr. Grange (*The Lancet*, August 27, 1892) finds that burns of the third and fourth degree are probably often fatal in young children when not a seventh of the body's surface is implicated. Since "shock" appears to be such an important factor, even when death occurs after the second day, the author believes the warm-bath treatment to be contra-indicated in those unaccustomed to baths, and that during the first forty-eight hours they tend to increase the shock. The great proportionate fatality in children may be partly explained, he thinks, by the fact that in them the shock to the nervous system, falling largely upon the medullary and emotional centres, expends itself upon parts essentially organic and of vital importance.

Ozæna may be cured, it is claimed, by the following simple combination, which Dr. Tarbau has employed successfully in ten cases: Iodol, tannic acid, and borax are to be mixed in equal parts and used as a snuff five or six times a day, and, as improvement goes on, three times daily.

Clinical Department.

CLINICAL HISTORY OF THE FIRST CASE OF CHOLERA IN NEW YORK.

By ROBERT DESHON, M.D.,
NEW YORK.

The man was thirty-five years of age, born in Ireland, and a resident of New York City for the past ten years. He was of dissolute habits and a hard drinker. His occupation was that of a plasterer and laborer, mainly along the river front.

He was taken sick on September 5, 1892, but previous to that date he had slight painless diarrhœa. On that night the diarrhœa increased in severity, causing him considerable annoyance. The following morning he arose feeling very weak, but well enough to eat a light breakfast and go to his work. At about 10.30 A.M. the diarrhœa became so violent, muscular debility and tremors, with a feeling of faintness, having been ushered in, that he was obliged to leave his work and go home. At 2.30 P.M. I was called to see the patient. I noticed that his face was pallid and had a very anxious expression, and nervous symptoms, such as tremors and vertigo, were very decided. The thirst was insatiable. There was also nausea and vomiting, with slight griping pains in the bowels. He had had about eleven stools since 10.30 A.M. His axillary temperature was 101° F., pulse irregular. The patient complained mostly of cramps in the muscles of the calves of the legs, arms, and fingers.

After prescribing and giving directions regarding the treatment, I left, feeling rather anxious about the case. At 8 30 P.M. I returned and found that the diarrhœa and vomiting had entirely ceased, and I was therefore unable to examine the excretions. At this time the patient's temperature was 97½° F., the pulse hardly perceptible, respirations oppressed and difficult, the tongue was dry and covered with a white coating, the hands and feet were cold and clammy, and covered with a slight moisture. All the symptoms of impending collapse were present.

The attendant informed me that the cramps in the abdomen had been so severe in the afternoon as to cause the patient to cry aloud. Knowing the case to be an important one, I called Dr. Henry F. Robinson in consultation. When we arrived at the house of the patient, at 9.15 P.M., we found him in a state of stupor, the whole body covered with a cold sweat, the radial pulse imperceptible, the eyes deeply sunken with dark rings around them, the skin shrunken and pinched, making the cheek-bones very prominent, and the rest of the body seemed to have assumed a bluish color.

After deliberate consideration of the clinical symptoms, we diagnosed the case as one of cholera asiatica. The man died about twenty minutes after we left the house.

Although we had neither of us ever seen a case of cholera asiatica before, the symptoms were such as would, without doubt, have puzzled almost any physician who had not seen such a case before. The fact that cholera asiatica was at the time prevalent in Europe and at the very entrance to our city, was an aid in diagnosing the case as we did. This, together with all the symptoms, appeared to us grounds for such diagnosis. The only facts unattainable were the source of infection, if any, and those resulting from an examination of the excretions, which had been disposed of in my absence.

Phenacetin is said by Dr. Green to diminish the frequency of calls to urination in elderly people, especially at night, and that ten grains at bedtime will often secure rest for those who habitually rise once or more during the night.—*Universal Medical Magazine.*

Hæmorrhoids rapidly diminish in size, become free from secretion and pain, and generally improve, according to Dr. James, if powdered daily with pure calomel.

TUBAL PREGNANCY.[1]

By WILLIAM PIERSON, M.D.,
AND
THOMAS W. HARVEY, M.D.,
ORANGE, N. J.

On August 23, 1892, at 10 A.M., Dr. Harvey was calle to see Mrs. H——, aged thirty-eight, an America mother of two children, the youngest ten years of age.

She had been well all night, but on rising from her be had been taken with a severe pain in the left side. Sh was lying on her left side with her limbs flexed and ev dently in a profound collapse. Her lips were blue an her limbs cold to the body. She was pulseless, e: tremely restless, and complaining of the pain in her al domen. She was able to answer questions, and said th she had missed her courses twice and had imagined th she had reached the change of life. However, she ha been flowing irregularly for the last two weeks.

Examination revealed a mass in the left side of th abdomen, immovable and dull on percussion. It wa situated above the pelvis, and was well-defined and i sensitive, although the patient was in such a feeble co dition that she hardly appreciated a painful touch.

The opinion was expressed that the condition was du to internal hemorrhage from the ruptured cyst of a extra-uterine pregnancy.

Dr. Pierson agreed with the diagnosis, and a laparo omy was accordingly proposed and made by him as soo as the preparations necessary for such an operation in private house could be made. The operation was mad with as much precaution as was possible under the ci cumstances. The abdomen was found full of fluid bloo and one large clot. These were rapidly turned out an the left Fallopian tube brought into view. It was e larged about the size of a black walnut, and presented rupture opening into the general peritoneal cavity th would admit the top of an ordinary lead-pencil. Th left tube and ovary were then removed, the abdome flushed out with warm boiled water, and the extern wound closed with silver wire and catgut. The patie was then given a copious enema of hot salt water an put to bed.

She made a good recovery, being able to sit up in chair on the fifteenth day, the abdominal wound bein entirely united.

On the fourth day the patient had two chills and sharp rise of temperature, which was attributed to stitch abscess that formed superficially at one of the si ver sutures. Evacuation of this was followed by com plete subsidence of the fever.

This patient's condition prior to the operation was on of most severe shock. She received between the tim that she was first seen and the time of operation, just tw hours and a half, 4 ounces of whiskey by the mouth 120 minims of whiskey, $\frac{1}{100}$ grain of nitro-glycerine, an ½ grain of morphine hypodermically, and during th operation she received 60 minims of whiskey hypoder mically; yet at no time did she react more than to hav a very feeble pulse at the wrist.

Within a half hour after the operation she was in bette condition than at any time previous.

Examination of the part removed showed that th ruptured tube had within its cavity an ovum of about si weeks, with the amnion still intact.

[1] Case reported to the Orange Mountain Medical Society, Septem ber 9, 1892.

Thermometric Observation.—"Mamma," said littl Johnny, "if I swallowed a thermometer would I die b degrees?"—*Boston Post.*

Professor Carl v. Rokitansky has been appointed Pro fessor of Obstetrics and Gynecology at the University o Gratz, to succeed Dr. Ernst Börner.

MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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AN INVESTIGATION OF THREE ANTIPYRETICS.

THE following conclusions regarding antipyrine, phenacetine, and phenocoll are the result of a series of experiments made in the Physiological Laboratory of the University of Pennsylvania by Drs. David Cerne and William S. Carter. They are published in detail in *Notes on New Remedies*. The points studied were those the effect of the drugs on the circulation and on the thermogenic function. Taking first the subject of the circulation, it was found that antipyrine in small and moderate amounts produces a rise of the arterial pressure, this stimulating effect being due to an action upon the heart. The lowering of the pressure by large or toxic doses is due similarly to a depressant action of the drug on the cardiac organ. The remedy does not seem to influence the vaso-motor system. Antipyrine causes an increase in the pulse-rate through paralysis of the cardio-inhibitory centres. The secondary decrease in the number of pulsations is of a purely cardiac origin, the drug exercising a depressant effect upon the heart itself. Antipyrine, in excessive doses only, changes the hæmoglobin into the blood into methæmoglobin.

The conclusions regarding phenacetine were that in moderate doses it causes a rise of the arterial pressure by acting upon the heart, and probably likewise by a stimulating influence exercised on the vaso-motor system. The reduction of pressure by the drug in large amounts is mainly of a cardiac origin. The remedy increases in small doses the force of the heart by a direct action. Phenacetine increases the pulse-rate chiefly by cardiac stimulation, and possibly also by influencing the cardio-accelerating apparatus. The drug reduces the number of pulsations, especially in large quantities, primarily, by stimulating the cardio-inhibitory centres, and, later, by a depressant action upon the heart.

It was found that phenocoll, in ordinary amounts, has practically no effect upon the circulation. Large doses diminish the blood pressure by influencing the heart. Phenocoll reduces the pulse-rate by stimulating the cardio-inhibitory centres. It then increases the rapidity of the pulse by paralyzing said centres. The final diminution is of cardiac origin. Upon the blood itself phenocoll has no action.

Regarding heat phenomena the following conclusions are drawn:

1. Antipyrine, phenacetine, and phenocoll all fail to produce any effect on the heat functions of the normal animal.

2. Antipyrine produces a decided fall of temperature in the first hour after its administration in the fevered animal. This reduction is due to a great increase in heat dissipation, together with a fall in the heat production.

3. Phenacetine, both in septic and albumose fevers, produces a very slight fall of temperature during the first and second hours after its ingestion by the stomach, but the greatest reduction occurs the third hour after its ingestion. The fall of temperature results chiefly from a decrease in heat production, with a slight increase in the heat dissipation. The increase in dissipation is not as great as with antipyrine. Probably the delayed action of the drug depends on its insolubility.

4. Phenocoll causes in fever a very decided fall in temperature, which occurs the first hour after the administration of the drug by the stomach. This reduction is the result of an enormous diminution of heat production, without any alteration of heat dissipation.

The general conclusion would be that phenocoll produced less tendency to cyanosis, and was a better antipyretic because it lessens heart production. Phenacetine is safe so far as the heart is concerned, and it is known clinically that it is a superior analgesic. All of the three drugs, however, will produce cyanosis and cardiac depression if given in very large doses.

THE TREATMENT OF BALDNESS.

THE public always welcomes with eagerness anything that is new and hopeful pertaining to the treatment of baldness. While the hopes that may be thus raised are soon dashed to the earth by a few personal experiments, or the object-lesson of a consultation with eminent but thin-haired dermatologists, it is not wise to suppress the new discoveries; for science may yet triumph over alopecia as it has over even more formidable obstacles.

This much is certainly being done: baldness is being very richly classified, and its clinical manifestations accurately mapped out. Fournier gives us two groups and nine classes of baldness. That there are nine muses and nine kinds of baldness, is a fact full of suggestiveness and consolation to the poetic mind.

We shall not attempt to follow Fournier, or to go deeply into the etiology and remediology of alopecia. There seems to be a general opinion that, leaving out the post-infective forms, most kinds of baldness are neurotrophic, parasitic, or senile. For senile baldness we cannot expect a cure; the aged themselves accept their deciduousness as a part of the natural course of things. Of the other forms, Dr. A. H. Ohmann-Dumesnil, in *The Practitioner*, has a good deal that is hopeful to say. For the pre-senile or neurotic baldness he advises the following pill, taken twice daily: ℞. Strychniæ sulph., gr. $\frac{1}{60}$; ferri redacti, gr. j.; quiniæ bi-sulph., gr. j. To this he adds: hypophosphites and gr. $\frac{1}{8}$ to gr. $\frac{1}{6}$ of pilocarpine hydrochlorate at bed-time. For the parasitic forms of alopecia areata, Dr. Dumesnil advises a three per cent. solution of creolin for the entire scalp, and locally an ointment composed of hydrarg. perchlorid. corrosivi,

gr. j.; lanolini, ʒj. A more drastic measure, which he recommends for alopecia areata, is one first suggested, we believe, by Dr. L. Duncan Bulkley. It consists in painting the affected area with pure carbolic acid. This application Dr. Dumesnil applies twice a week, with results which he asserts have so far been uniformly gratifying.

FEMALE INEBRIATES AND SPECIAL LEGISLATION.

The law is a curious and wonderful thing, and becomes more so from year to year in the great commonwealth of New York.

The last embodiment of Democracy and statecraft which met at Albany passed a law authorizing the legal commitment of female inebriates to a certain excellent Episcopal refuge in this city. The persons committed may be victims of alcohol, opium, or other narcotic. They are committed on the certificate of two physicians, approved by a judge, much as is the case of lunatics. But the curious fact is that only women can be committed, and these women can only be committed to the one private sanitarium.

The law is beneficent and beyond criticism so far as it goes, but it is a beautiful illustration of special legislation, concerning which the eminent predecessor of Governor Flower had much to say, and much to do. We only hope that there will next year be proper provision made for the unhappy male victims of inebriety.

ORGANIC AND SOMATIC DEATH.

A correspondent of the *British Medical Journal* asks if the hair ever grows after death. To this the editor replies:

"A question like this really hardly deserves a serious answer, although it comes to us from time to time from serious people. The unshaven beard of a dying man probably looks a little more prominent after death on account of the shrinking of the skin. The only recorded instance of which we are aware is that described by Guy de Maupassant in 'Belami,' his page 221. The French realistic novelist is supposed to hunt up "documents' for his facts, but we fear in this case the eminent novelist must have relied wholly upon his imagination in order to impress that of others."

Our esteemed contemporary is somewhat hasty in his judgment as to the above point. Cases in proof of the fact that the hair does grow after death have been reported by Good, Pariset, Villerme, and Bichat. The fact of the possibility of such growth is admitted by authorities in medical jurisprudence. It is not incompatible with the known laws of physiology, for these teach that we all have two deaths, a psychic or organic, and a somatic or cellular. Somatic life, *i.e.*, life of individual cells, may and probably always does continue for some time after the organs cease their work. A most extraordinary case of post-mortem growth of hair was reported in the Medical Record for August 18, 1877, by Dr. Caldwell, of Iowa. This gentleman was present at the exhumation of a body which had been buried for four years. He found that the coffin had given at the joints and that the hair protruded through the openings. He had evidence to show that the deceased was shaved before burial; nevertheless the hair of the whiskers measured eight inches and that of the head eighteen inches.

We are not prepared to deny that Dr. Caldwell was suffering under some hallucination, or had dug up the wrong man; but his evidence as to post-mortem growth of hair does not rest alone.

A GROWING EVIL.

We believe in wit and humor and poetry and all the *jeux d'esprit* that make the earth more lovely and lively; but we have no sympathy for the medical doggerel which clogs the columns of so many American medical journals. Listen to these sample verses which are going the rounds of some of our esteemed contemporaries:

> "We choose for a subject 'The Fever Typhoid,'
> An insidious disease people try to avoid.
> Its cause is a germ, wise men seem to think,
> Also most contagious through food and drink.
>
> "It attacks the whole body, the heart, lungs, and brain;
> The liver and kidneys are caught in its train.
> It strikes in the bowels, the peyerian glands;
> On the solitary ones its virus expands."

And so on for a dozen samples of pathology yoked to dysrhythmic verses. A corrective for such effusions was given by Mr. Pope some hundred odd years ago:

> "Hearken, ye wolves, while Ralph to Cynthia howls,
> And makes night hideous; answer him, ye owls."

THE TREATMENT OF RABIES BY IMMUNIFIED BLOOD-SERUM.

Experiments similar to those made in respect to tetanus have recently been carried out in the pathological laboratory of Bologna which would appear to show that blood-serum from a rabbit, rendered immune by the Pasteur method, will cure rabbits in an advanced stage of hydrophobia. And Professor Murri, of the Bologna University, has successfully applied the method to a human being already suffering from the disease. An account of the case and of the method is to be found in an original article translated by Dr. Hime in the *Lancet* of June 4, 1892.

Commenting editorially upon this important advance in treatment, this journal says that "Tizzoni had already proved, in conjunction with Schwarz, that the serum from the circulation of an animal rendered proof against the hydrophobic virus reveals a disinfectant action, destroying the said virus when introduced by inoculation in rabbits, and this for an interval of time of about forty eight hours. He next verified the validity of the doctrine laid down by Valli at the beginning of the century that the substance of the nervous system of rabid animals when subjected to artifical digestions, loses its toxicity and, moreover, when injected, that it acts like the medullæ of Pasteur, endowing the inoculated animals (always rabbits, as being more alive to the infection) with resisting power against rabies."

He now claims to have succeeded by special method in extracting from the medulla of a hydrophobic animal the vaccinating substance, deprived of its toxicity, which forms the active agent of the Pasteur treatment. The

stance, he asserts, invariably preserves rabbits from results of infection, but it will not cure the disease if n as late as seven days after injection. If, however, serum of vaccinated animals be employed instead of non toxic vaccinating substance, the "immunify-substance," already elaborated in the organism of the s-proof animal, is brought into direct contact with poison of rabies, and nullifies its action. "In other ds, the vaccinating substance remains inert when the ady is developed; the 'immunifying substance' enables o combat the poison in cases where hitherto interven-ot any kind has been unavailing."

PASTES FOR CANCER.

. hears so much of the knife and of drugs in cancer it is something of a novelty to meet with an article n an eminent and scientific physician arguing in favor austic pastes. Dr. A. K. Robinson, in the *Interna-l Journal of Surgery*, maintains that in epithelioma-tumors, during the earlier stages, and even when they of considerable size, the use of caustic potash will much better results as regards complete removal of lisease than can be obtained with the knife, provided same area of tissue is destroyed or removed in both ations. He is furthermore satisfied that from the f the caustic potash, and some of the other caustics, is formed in the tissues cauterized a toxalbumin h is destructive to the cancer cells, or organisms, if exist. Perhaps, he adds, it is the inflammatory ess alone that gives such good results in the primary r, but when one sees enlarged lymph-glands at a dis-from the primary tumor diminish in size after the rization it is difficult to avoid the view that such an must be acting.

chloride of zinc the writer says: This can be used in stick form, or in solution, or in a paste. It not destroy tissue so rapidly as caustic potash, and ises much more pain, which also lasts for a much r period. It destroys both normal and pathological , although not with an equal degree of rapidity, and most valuable agent in the treatment of epitheliо-In all the cases suitable for the use of the potash nc can also be employed, and, in the stick form, on unt of its slower deliquescence, and the ability to as a pointed pencil or arrow, it is much to be pre-l for some cases. A chloride of zinc paste is one of est means we possess in the treatment of cutaneous elioma, and has also been strongly recommended for nary cancer.

The use of arsenious acid in the form of a paste den's paste), Dr. Robinson says, we have an agent n a certain class of cases has given the best results from any treatment. Marsden's paste consists of parts, by weight, of arsenious acid and powdered , rubbed well together, and enough water is added ke a paste about the consistence of butter. The must be freshly made each time it is used. It is l upon muslin or rubber plaster in a layer about uarter of an inch thick, and firmly applied to the Marsden advises that it be not applied at one time rger area than one square inch; but the writer has d it to very much larger surfaces and has never seen any injurious effects. It is not suitable for cancer of the lip, or of mucous membranes, on account of the danger of poisoning by absorption. A study of its action on a tumor of small size will give an idea of the result obtained when the treatment is properly conducted.

Comparing zinc and arsenic, Dr. Robinson says: The effect of the chloride of zinc paste in twenty-four hours is the same as that of the arsenious acid paste in sixteen to eighteen hours; but the injury to the normal tissue is greater with the former than with the latter, consequently the Marsden's paste has a tendency to destroy the pathological tissue in a special manner in addition to the action of a non-elective injurious agent, which destroys pathological tissue sooner than normal, provided the action requires to be exerted for a period of time to produce destruction of tissue.

The "cancroin" treatment of Adamkiewicz, the aniline dye treatment of Mosetig-Moorhof, the thallin papain treatment of Granville, and the voltaic treatment of Parsons all seem to have made little impression on cancer therapeutics, and we are brought by Dr. Robinson back to the treatment of our fathers; and, we may add, of many successful quacks.

IS THE MILLENNIUM AT HAND?

But a short time ago we were treated to the spectacle of seeing the entire medical profession amazed, and the reading portion of the civilized laity set agog—particularly the prematurely superannuated individual who had indulged in pleasures early and long drawn out—by a statement from one of the greatest living physiologists, that he had made a discovery of a substance the injection of which beneath the skin resulted in rejuvenescence. The promised land with the fountain of youth was apparently at hand. It is unnecessary to say that that person was the savant Brown-Séquard, and the substance the much-laughed-at testicular essence. The reputation of the promulgator of this plan of treatment was such as to demand corroboration or denial from the scientific world, and the result was that within a short time a great number of valetudinarians were mustered into service, here as in other countries, but all to no avail. The most carefully conducted experiments with a fluid prepared according to the specific instructions of the originator were made, but even the most sanguine were unable to detect any change in those experimented on, except such as might be explained on psychical grounds, namely, a feeling of mental exhilaration and a bettering of bodily tonicity; but unfortunately these were evanescent and the cessation of the injections was the signal for their departure. A few more trials, and it was soon after seemingly relegated to innocuous desuetude by all except its distinguished originator. He has persevered and is still laboring on the subject, and every now and then he has something to say on the subject in his *Journal de Physiologie*. But the world at large, it is safe to say, has dropped it, and is willing to wait now patiently until the miracles of lengthening the days of man from the time-honored three score years and ten to a number equal to Methusaleh's is proven. But if this seeming air of neglect seems to have pervaded most of the members of the medical profession, we cannot help but remark that the pollen

has in some cases fallen on fertile soil, and the resulting newly produced anthers are now beginning to show themselves in the numerous articles published in the European medical journals of the beneficent results following the injection of "nervous matter," for instance, in diseases which we know, much to our sorrow, to be incurable. To mention one, Constantin Paul recently reported that he had treated three cases of tabes, and several cases of neurasthenia and other diseases of a different nature, by the subcutaneous injection of a solution made from gray matter, and he cheerfully informs us that the fulgurating pains disappeared, the gait improved, and in one case the reflexes returned. If this was a case of true tabes, it surely makes great draughts on one's credulity. But a more striking example still is reported by Bard to the Medical Society of Lyons, wherein he deposes that he has been treating a case of acromegaly by injecting a solution of the pituitary gland of the sheep, and great benefit has resulted. We know very little of acromegaly, but one fact associated with its progress is, that in all cases yet reported it is an incurable disease, and progresses gradually on to death. We may build theories innumerable as to its causation, and sift them down, as has been done, to some disturbance in the pituitary gland or in the thyroid, or both, but on what ground it can be suggested that injection of the essence of a dead pituitary gland of an animal replaces the function of a gland that is diseased, is not apparent unless indeed it be on the ground of similia similibus curantur. Still these observers report cases of such conditions, but they are chary enough to say that they have as yet observed only great relief and amelioration, but which in their opinion they believe to be permanent; which means, in other words, that the activity of the present disease so far as its individuality is concerned, is at an end.

The science of physiological chemistry has within the past few years opened up avenues of research which were, within the memory of the present generation, only dreamed of, and nowhere has it been more potent than in demonstrating to us the fact that many diseases are dependent on the absorption into the system of tox-albumins, be they leucomaïnes or ptomaïnes or what they will, in the nature of substances manufactured in the system from living or dead matter. And we know also that many of these substances, when taken or absorbed in sufficient quantity, will cause death; and, like analogous animal and vegetable substances which are alkaloidal in their nature, they have the property of producing a stage of excitation or exhilaration when taken in small quantities or perhaps for a short time; and to this and another largely contributive element, namely the psychical element, must we attribute the apparent beneficent results in the most of these cases. This last, the psychical element, is not to be descried. It is unnecessary to insist on its importance even to the merest tyro. Innumerable examples show its importance and seeming efficacy every day. If such is not the explanation of the results in these cases, it is surely owing to the profession by the originators of such plans of treatment, that they formulate a theory or a hypothesis on which the rationale of their plan is to be explained. And then it can be left to the axiom first suggested by Lewis, that "every discovery is a verified hypothesis" as to what its ultimatum shall be.

News of the Week.

The First International Congress of Gynecology was held in Brussels on September 7th, 8th, and 9th, Dr. Kuferath presiding. Sir Spencer Wells made an opening address. Over four hundred persons were present. The special topics for discussion were—"Pelvic Suppuration" "Ectopic Gestation," and "Placenta Prævia."

The Treatment of Cholera by injections of hydrogen peroxide is being much exploited by correspondents. One Dr. E. Lee states that he has treated twenty two cases, with only two deaths.

Another Analgesic has been put on the market. It is called agathin, and it is composed of salicyl and methyl phenylhydrazon. Its dose is about ten grains, and its sponsor is Dr. Rosenbaum, of Frankfort.

Another Medical Prince.—At the University of Edinburgh, the medical commencement was held during the first week in August. Among those who received the degree of Bachelor of Medicine was an Indian prince, Sir Baghvat Singh Jareja, the Thakore Sahib of Ghondal. He is said to be the first native prince of Hindustan to acquire that particular degree, or any other Scottish medical diploma. His subjects purpose to signalize this unusual event by erecting a statue to their ruler, in his capital in Ghoudal, in which the newly made medical prince will appear in the gown and hood of his degree worn over his full native costume.

Ownership of Prescriptions.—A recent trial in a Detroit court resulted in placing the ownership of prescriptions in the hands of the patient and not in those of the pharmacist. Testimony going to show that druggists everywhere regard the prescription as their rightful property was excluded, on the ground that the patient has the highest claim to the written formula.

A Medical Cabinet Minister.—Mr. Gladstone has given a ministerial appointment to Sir Walter Foster, M.D., of Birmingham, by promoting him to the position of Political Secretary to the Local Government Board. This is said to be the first time in British history that the honor of this description has befallen a medical practioner.

Educational Progress.—Over one-third of the established medical institutions of the country now exact four or more years of professional study and three or more terms of lectures as conditions of graduation; forty-five per cent. more require three or more years of professional study and three regular terms of lectures. That is to say, nearly eighty-three per cent. have complied substantially, with the resolution of the Illinois State Board of Health of July, 1887. Of the remaining seventeen per cent. all but two are Southern schools—the exceptions being the College of Physicians and Surgeons of Boston, Mass., and the Northwestern Medical College of Toledo, O.—*Indiana Medical Journal.*

A New Gynecological Operation has been devised by Dr. Duhrsen, of Berlin. Its object is the vaginal fixation of the uterus for the relief of retroversion.

Compulsory Physical Education.—The Legislature of Ohio has enacted the following law: "*Be it enacted*

General Assembly of the State of Ohio. That physical lture which shall include calisthenics, shall be included the branches to be regularly taught in the common ools in cities of the first and second class, and in all ucational institutions supported wholly or in part by ney received from the State, and it shall be the duty boards of education of cities of the first and second ss, and boards of such educational institutions, to make vision in the schools and institutions under their jurisdiction for the teaching of physical culture and calisthenand to adopt such methods as shall adapt the same the pupils in the various grades therein."

Peroxide of Hydrogen in Diphtheria.—Dr. Francis H. liams recommends the use of strong solutions of perde of hydrogen in diphtheria (*Boston Medical and gical Journal*). He concludes that the peroxide ydrogen has the unique and necessary quality of disgrating the membrane and thus rendering the bacillus essible. As it only attacks dead organic matter the lthy tissues are not lacerated, as is the case when menical means are used to remove the membrane. The l peroxide of hydrogen solutions are an effective nicide against the bacillus of diphtheria, and not toxic he patient. The syringe is simple in construction inexpensive, it can be kept perfectly clean, and is attacked by solutions which quickly corrode metals. h it one can easily reach all parts of the throat which to be seen without a mirror. He adds that any local tment to be efficient must be applied early, and at uent intervals, but the strong peroxide solutions must be applied by the physician himself. They cannot roperly used by the relatives or attendants. During first few days, therefore, this takes more of the phy-n's time than otherwise, but the course of the dis- is much shortened in suitable cases, that is, where patient is seen early, and the membrane is accessible. point is to concentrate the attack before the patient oisoned, and thus save him from a prolonged illness. d nursing and proper and sufficient nourishment are to be omitted.

egistration of Prostitutes has been the subject of est in New Orleans of late. The City Council is idering the expediency of passing an ordinance re- ng the registration and weekly examination of fallen ien.

New Local Anæsthetic has recently been isolated iesel from the leaves of the small-leaved cocoa-plant va. Liebermann has proved that this base is ben- ψ tropeine, which bears no relation to the cocaine p, but is chemically closely related to atropine. It lled "tropsin" for brevity. Professor Schweigger, erlin, after several months' experience with tropsin e surgery, reports that: 1. A three per cent. solution uces complete corneal anæsthesia more rapidly than ine. Iridectomy could be done painlessly two min- after putting three drops into the eye. 2. Anæsthests from three to six minutes for each instillation, no further prolongation can be produced save by a dose. 3. Mydriasis is absent, or but slight. 4. emia never occurs, but sometimes there is a passing t hyperæmia, and a little smarting unless normal saline solution be used as a solvent. 5. No injurious symptoms were ever observed. 6. In removal of foreign bodies, tropsin seems, from its quicker action, far preferable to cocaine. Dr. Silex, assistant in the Policlinic, has obtained similar results.

Suicides are peculiar in the methods which they adopt as well as in other ways. Dr. James G. Kiernan states, among other things (*Medical Standard*), that some suicides drop, like Mr. Wegg, into "poetry." One Chicago specimen left the following couplet:

> Here's a receipt for a popular suicide,
> Take twenty grains of potassium cyanide.

He was a photographer and sought a painless death. German maidens often soak matches in beer and leave the world with a libation to Gambrinus. "Rough on rats" and strychnine are astonishingly popular considering the painful death produced by them, and the ease with which morphine and laudanum can be procured. Suicide by poison and drowning are most frequent among women, since they disfigure least. Revolutionists, miners, and quarrymen often use dynamite. A Chicago lunatic convicted of the murder of a policeman at an anarchist meeting, blew his face off with a dynamite cartridge and thereby ensured what, in a sane man, would have been horrible suffering. Penalties could exert but little influence on most insane suicides. The mass of suicides are, however, affected by them. Wherefore a modification of the New York suicide law (by a clause giving the body for dissection) would tend to check the growing suicide rate in Chicago.

The Ontario Medical Journal is the title of a new monthly published at Toronto, and edited by Drs. R. B. Orr and W. H. B. Aikins.

Obituary.

J. H. DOUGLAS, M.D.

NEW YORK.

Dr. J. H. Douglas, died in Washington on October 1st. Dr. Douglas was one of the well-known specialists in throat diseases of this city. He abandoned his practice during General Grant's illness, and devoted his time exclusively for six months trying to relieve the General's sufferings. After the death of General Grant, Dr. Douglas, then broken in health, sought to renew his practice in New York, but it was not long before it was discovered that he was suffering from the same malady for which he had been treating General Grant. He went to Cuba to recuperate his health, but received no permanent benefit from the trip. His livelihood depended upon his practice, and after the loss of that he became almost destitute. For the last few years he has been in almost straitened circumstances, dependent on his daughter, who is a $900 clerk in one of the departments. Dr. Douglas was born in the village of Waterford, Saratoga County, and was graduated from Williams College in 1844. He came at once to New York City, and remained here ever since, practising his profession until his health gave way under the strain on his system of General Grant's case. While he was in Cuba, in 1886, seeking to recuperate his health, he was nominated to succeed ex-Senator Platt on the Quarantine Commission, but the nomination was not confirmed by the Senate, which was Republican. He was sixty-nine years of age.

Society Reports.

MEDICAL SOCIETY OF VIRGINIA.

Twenty Third Annual Session, held at Alleghany Springs, Va., September 13, 14, and 15, 1892.

H. Grev Latham, M.D., President, in the Chair.

Medical Examining Boards the Only Means of Reforming Medical Education.—Dr. Jacob Michaux, of Richmond, delivered the Annual Address to the Public and Profession. His main points were the absolute necessity for (1) preliminary academic examinations before admission to the medical schools is allowed, and (2) separation of the teaching and the examining departments. He suggested that the various State examining boards be made boards of health.

Tetanus.—Dr. Charles M. Blackford, of Lynchburg, was the successful competitor for the Hunter McGuire prize of $100 for the best essay examined by a committee of five Fellows appointed for the purpose. He defined tetanus to be an acute, infectious disease, characterized by tonic contractions of the muscles of mastication. The following were his conclusions: 1. Tetanus consists essentially of a tonic spasm of certain muscles, which have been thrown into a state of physiological tetanus. 2. This is caused by an abnormal irritability of the reflex centres in the medulla and cord. 3. This hyperæsthesia is the result of the physiological action of certain ptomaïnes, or alkaloids of decomposition, formed in the wound, and absorbed therefrom. 4. These ptomaïnes are the result solely of the growth of a specific bacterium called the bacillus of tetanus, or the "bacillus of Nicolaier. 5. Tetanus is, therefore, a toxic disease, caused by the infection of a wound by this specific bacterium or its products.

As to treatment, "An ounce of prevention is preferable to the pound of cure." At once explore the wound and clean it of all foreign substances with scrupulous care. Open the recesses of the wound and apply a germicide. Iodoform or aristol should be freely used because of their undoubted power to destroy the ptomaïnes—perhaps through the iodine they contain. Corrosive sublimate and carbolic acid remain our chief aids in rendering the wound surgically clean, and should be used first. the iodoform or aristol being used after disinfection, If tetanus occurs after this disinfection then the wound has been contaminated as a result of some omission or commission on the part of the surgeon. The prevalent idea that wounds of the hands and feet are peculiarly liable to be followed by tetanus is due to the fact that the hands and feet are more liable to become dirty and are more difficult to cleanse.

Should the attack commence, the first indication is to stop the formation of the ptomaïne. To do this the wound should be opened and disinfected by means of a solution of corrosive sublimate ($\frac{1}{2}\frac{1}{5}$ths or $\frac{1}{5}\frac{1}{0}$ths), by the use of which the shock incident to the curette or cautery is avoided. To avoid peripheral irritation as far as possible, the room should be absolutely quiet. The bedclothes should be light, and, if practicable, supported by a frame above the patient so as not to touch him.

The speaker mentioned a number of drugs that have been used with more or less success, but held that the chief reliance should be on physostigma. A third of a grain of the extract subcutaneously, or a grain by the stomach every two hours, is enough to commence with. The subcutaneous use of salicylate of physostigmine is a more elegant mode of administration, and by this means the pain and spasm which attend the effort to swallow are avoided. Tetanus antitoxine, discovered by Tizzoni and Cattani, has been used successfully hypodermically to cause immunity from the disease, even in highly susceptible animals. Even the blood-serum of these immune animals is antitoxic, and produces immunity against, and cure of, the disease. Tetanus antitoxine may be produced in a solid shape by adding alcohol to the serum of an inoculated animal, and evaporating *in vac.*. Schwartz relates the case of a boy, fifteen years of age, treated by him; and says that Gagliardi, of Molinel, treated successfully a severe case by hypodermic injection of one gramme.

The subject for the session of 1893 is "Obstruction to the Function of Micturition, and the Results." The offer is open to members of State Medical Societies of West Virginia, Virginia, and North Carolina.

Dr. Joseph Price, of Philadelphia, Pa., offered, for the session of 1893, a prize of $100 for the best essay, by a member of the Virginia State Medical Society, on "The History of Surgery and of Surgeons in Virginia," his native State.

On nomination, Dr. Price was elected an Honorary Fellow of the Society.

The President's Address was delivered by Dr. H. Grev Latham, of Lynchburg.

Vertigo.—The discussion on this subject was opened by Dr. E. T. Brady, of Marion. After remarking upon the nature of vertigo, in general, he stated that the causes were gastric, cardiac, cerebral, laryngeal, ocular, auric, toxic, epileptic, and essential. Laryngeal vertigo he regarded as another form of epilepsy, and believed that it would eventually be found that the toxic form was the most common. He believed that a far greater number of cases were attributable to nervous causes than to disturbance of the intra cranial circulation. There are three causes that might affect the nerves, namely, *a*, the direct mechanical or chemical effect of poisons, or imperfectly oxidized materials accumulating in the blood; *b*. pressures upon centres governing the equilibrium, and *c*, reflex, from acute localized inflammations, the equilibrial centres being disturbed by unusual impressions caused by the deflection from associated nerve-fibres. In speaking of the gastric form, he called attention to the fact that it was not accompanied with violent indigestion, but that digestion was prolonged, or delayed. This he regarded as the most common form. He called attention to the fact that deaf-mutes were free from vertigo, and seemed to infer from this that the sense of hearing enters largely into the causation of this condition. He omitted epileptic vertigo as being a form of epilepsy, and deserving a more detailed treatment than could be accorded it in such a limited space of time. He recommended cocaine locally in Menière's disease, and suggested the advisability of producing deafness in obstinate cases.

Dr. William C. Dabney, of the University of Virginia, after remarking that vertigo is often due to toxic principles in the blood, recommended small doses of one tenth grain of morphine, as affording temporary relief in some forms of renal vertigo especially. Of course the most important point in all these cases is to remove the cause.

Dr. Bedford Brown, of Alexandria, said that vertigo is not a disease, but rather the manifestation of disease, usually functional, sometimes organic, and then again of purely sympathetic origin. It may arise from morbid conditions of the circulation of the nervous system of the most opposite character. It often precedes death from post partum or other uterine hemorrhage. Some of the most violent types of vertigo are associated with the hysterical state. Alcohol and tobacco are fruitful causes of vertigo through their poisonous action on the brain and sympathetic system. Indigestion of a transient character and protracted dyspepsia, such as biliousness, cause sympathetic vertigo. Then we have an explosive form of vertigo due to blood poisoning, as seen during the progress of uræmia—coming and going in rapid succession. The therapy is as diverse as the causes are varied. Antiphlogistics, such as cathartics, and a simple diet, are demanded when vertigo is associated with plethora or congestive tendencies. In cases of high arterial tension, due to hypertrophy of the left ventricle, digitalis and

nitro-glycerine are of use. Iron and strychnine almost invariably relieve cases associated with anæmia. Full doses of valerianate of ammonium and bromide of sodium give prompt results in the hysterical and nervous forms of vertigo. For the vertigo of Bright's disease, nitro-glycerine ($\frac{1}{70}$th gr.) three times daily, with saline aperients and diuretics, are of service. Among the very best eliminant diuretics in these cases is diuretine or the salicylate of theobromine, in doses of two to five grains every two or three hours, in capsular form. In "bilious vertigo" acid fermentation and putrefactive action should be corrected by alkalies, and then hydrochloric acid, pepsin, strychnine, and bismuth subnitrate should be given. In nervous, feeble constitutions, pills of valerianate of iron, quinine, and zinc, produce admirable effects. When the tendency to vertigo is marked and persistent, the urine should be tested for albumin, casts, and sugar. The speaker had never seen a case of chronic nephritis or diabetes mellitus that was not accompanied with more or less vertigo.

Dr. Joseph White, of Richmond, remarked that aural vertigo accompanies such troubles of the ear as hyperæmia, anæmia, and apoplectiform troubles of the labyrinth (Menière's disease), which are usually associated with corresponding alterations in the brain. Ophthalmic vertigo is due to lack of co-ordination of the ocular muscles. Nasal vertigo has been reported by a number of authors, who assert that the intra-nasal changes by way of Meckel's ganglion cause localized vaso motor alterations and anæmia in the brain. But Dr. White believed all such cases to belong to the category of "aural vertigo." Charcot first used the name laryngeal vertigo to designate laryngeal spasm followed immediately by vertigo and loss of consciousness. A patient in apparent health is suddenly seized with a mild tickling or irritation of the larynx, which produces a slight cough. Obscurity of vision and dizziness immediately follow, and he falls into a state of complete unconsciousness of only a few seconds' duration. Ordinarily there are no premonitory symptoms, and no assignable cause. In mild cases unconsciousness may not occur. The semblance to epilepsy is such that some observers style it "laryngeal epilepsy." The laryngeal cavity rarely presents evidence of lesion, although some cases have seemed to depend upon a catarrhal laryngitis.

Dr. Joseph Price, of Philadelphia, remarked upon some cases of vertigo following prolonged hemorrhage, as in tubal pregnancy, neglected polypi, etc.

Mysteries of Medicine was the title of a paper read by Dr. Charles W. Cleaves, of Wytheville. He recounted many of the absurd practices and teachings of physicians of centuries ago, and of the charlatans of this generation; and closed with quotations from Whittier and others, describing the true physician of to-day.

Puerperal Fever.—In his paper on this subject Dr. R. L. Martin, of Stuart, spoke of the accepted idea that all cases of puerperal fever are due to infection per vaginam. He reported two cases: 1. A lady, the fifth day after labor, had a chill; temperature, 104° F.; pulse, 160; respiration, 40; suppression of lochia and vomiting. Intra-uterine irrigation, 1 to 3,000 bichloride solution, by means of a fountain syringe, and Chamberlain's intrauterine tube was used. In three or four hours the temperature became normal; pulse, 96. Irrigation was repeated for the next few days as a matter of precaution, and iodoform gauze applied around the cervix. This patient made a good recovery and had no rise in temperature after the second day. 2. Abortion at the fourth month; the reporter saw the patient two days after, when she had chill, fever, and offensive lochia. He found portions of the placenta in utero; these were removed with the curette, and an intra-uterine irrigation of bichloride of mercury (1 to 4,000) was used; iodoform was also applied to the interior of the uterus, a dose of castor-oil given, and vaginal douche of hot water ordered daily. This case also made a rapid recovery. Dr. Martin said that during the first years of his practice, with but little local treatment and relying on internal treatment, he had lost most of his cases. Since using the improved treatment he has had no losses.

Strangulated Hernia.—Dr. Martin also reported an operation for strangulated inguinal hernia of four days' standing. The wound sloughed on the tenth day, and fecal matter passed for three weeks by the artificial opening, which gradually closed, so that now the patient passes fecal matter per rectum, is able to do her housework, and is in good health.

Dr. Joseph Price, of Philadelphia, remarked that puerperal fever may be due to any of several causes. Even before gestation a small, hidden fibroid may be waiting in the uterus, as it were, for pregnancy to occur, in order that the fœtal kicks of quickening may bruise it and start up inflammatory action. Undoubtedly many such a patient is buried without a correct diagnosis having been made during life. Puerperal fever is not always an infection from the outside, and yet absolute cleanliness cannot be too much insisted upon in every maternity. Childbed fever is common enough over the whole world. An epidemic of it is now prevailing in Los Angeles. In Paterson, N. J., there were eighteen deaths from it during the past year. Either there is some other cause for the disease in these localities, or else there is something wrong about the nurses, doctors, surroundings, etc. Dr Price was of the opinion that no woman ought ever to die of childbed fever contracted by so-called infection from without. The practice of the gospel of cleanliness will prevent infection.

Irrigation of the Colon and Feeding per Rectum.—Dr. Edwin Ricketts, of Cincinnati, gave a short description of the colon, showing that the distance from the rectum to the ileo-cæcal valve was a little more than five feet. By means of the Langdon rectal tube, which is five feet in length, the colon could be thoroughly irrigated with warm water. He reported cases in which he had fed by injecting nutrient enemas through this tube by means of the Davidson syringe, depositing the same between the ileo-cæcal valve and the rectum. The patient is thus less liable to lose the nourishment as when it is simply deposited within the rectum.

What Shall be Done with the Imbecile?—Dr. Samuel J. Fort, of Ellicott City, Md., reviewed the work of caring for that class of defectives as instituted by the elder Seguin, Richards, H. B. Wilbur, and others, gave some very interesting figures regarding the total number of idiots in the United States as reported in the census of 1890, and concluded with a plea for State provision for imbeciles of all grades in every State of the Union.

Common-sense in the Treatment of Discharge from the Ear.—Dr. Alexander Duane, of New York, presented a paper with this title. After enlarging upon the importance of the subject to the general practitioner, he contended that the therapeutic principles to be enforced here are the same as those governing the treatment of suppuration anywhere else, and are comprised in the words cleanliness, drainage, and the removal of hopelessly diseased tissue. These indications are best fulfilled by thorough irrigation with some cleansing fluid, the best one for the purpose being a weak solution of common salt. Politzeration to force out the residual discharge may be used as an adjuvant to the syringing. If these measures do not suffice for a cure, astringent powders (boric acid, alone or combined with zinc oxide) may be used, but only in connection with thorough cleansing by preliminary irrigation. Granulations and polypi must be carefully removed, the operation being done by a good light and with the patient fully under control. Any tendency of the granulations to recur must be checked by the instillation of alcohol with or without the addition of corrosive sublimate. In the case of caries, iodoform is useful. These procedures, combined with suitable constitutional treatment, will usually succeed unless there is extensive caries, or unless drainage is prevented by the

situation of the disease (in the attic) or by inflammatory hypertrophy and swelling. In this case resort should be had without delay to removal of the obstructing and diseased parts by a radical operation. By following out the treatment thus outlined the author believed that in nearly every case of chronic suppuration the disease can be cured, the danger of cerebral involvement be averted, and the necessity of doing a mastoid operation be done away with altogether.

Modern Electrical Methods as a Substitute for Surgery in Certain Pelvic Affections.—Dr. G. Betton Massey, of Philadelphia, read a paper on this subject. The conditions considered were diseased ovaries, fibroid tumors, and displacements. In spite of the wholesale castration of women for salpingo oöphoritis they rarely were in better health afterward, not only on account of the cutting of nerves and adhesions and other traumatisms produced by the operation, but because the primal seat of disease, the uterine inflammation, remained untouched. This condition preceded the catarrhal extension to the tubes, and in the writer's experience remained most important in most cases. Direct galvanic applications to the uterus were indicated, and would often result in the restoration of an unmutilated woman to society. Displacements were also now considered to be secondary effects of microbic infection, in spite of which the irrational treatment by pessaries continued. A reduction of oversize and weight, and restoration of muscular tone were here required, rather than the unnatural resort to a skeleton within the vagina; and in the accomplishment of this purpose well-considered intra-uterine applications of both galvanic and faradic currents were indicated. The author had treated sixty-eight fibroids by modifications of the Apostoli treatment, with good results in sixty-four cases. Seven had disappeared entirely, and the remainder of the sixty-four were reduced in size to various degrees, and were cured of hemorrhage, pain, and pressure symptoms.

Excision of the Female Breast.—Dr. Robert O. Owen, of Lynchburg, remarked that many growths within the female breast are, or if neglected will become, malignant. Painful enlargements of the breast, not ordinary abscesses, should be excised if the slightest disposition to malignancy presents. After describing the old method of operation, he reported a recent case to explain the method he now advocates as the best. Miss L——, aged nineteen, slight family history of cancer, had an ulcerated scirrhus of the right breast. Two semilunar incisions were made above and below and the growth was excised. After the flaps were drawn together at each extremity the wound was flushed out through the drainage-tube (still *in situ*) with a quart of warm Thiersch's solution. After this the tube was withdrawn, and the openings through which it had passed were closed, like the rest of the wound, by deep and close superficial sutures. The whole length of the incision was then painted with iodoform collodion. The oozing having been left uncontrolled, the entire cavity filled with blood. Thirty-six hours after the operation one deep and several of the close superficial sutures at each end of the wound were removed, and by gentle bimanual pressure the contained clot was expressed. The wound was then flushed with Thiersch's solution and injected with a small syringeful of the following:

℞. Aristol..... ʒ j.
Acidi boracici..... ʒ ss.
Ung. resinæ..... ʒ j.
Olei olivæ..... ʒ iij.
Acid. carbolat. (liquid)..... q. s. ad ʒ viij.
M.

The superficial stitches were removed on the sixth day, and the deep stitches on the tenth day. The patient went home cured on the eighteenth day. A principal point is to control hemorrhage by torsion. After separating the vessel from the surrounding tissue as cleanly as possible it should be caught at the end with a pair of Koeberle forceps and drawn out. The tissues should not be included. The special feature of this operation is perfect closure of the wound after cleaning and allowing the cavity to fill with oozed blood, as one's own blood is aseptic as regards himself. Dr. Owen did not approve of losing time in trying to control the oozing with hot water, etc., but believed the method described to be the surest and quickest.

Bacteria and Disease.—Dr. Charles M. Blackford, Jr., of Lynchburg, read a paper with this title. Bacteria affect the human system in many ways: 1. The bacterium directly attacks and destroys the tissues in which it lodges; thus in inflammations followed by pus formations pyogenic bacteria are probably directly responsible. 2. A by-product of the life of the micro-organism is the agent that immediately does the damage. Thus, in tetanus, the active poison is an alkaloidal product, or mixture of such products, resulting from the life of the bacillus tetanus. The alkaloidal products may be isolated, and are as certain to produce tetanus, if introduced into the system in sufficient quantities, as morphine is to produce its physiological effects. 3. Some bacteria are pathogenic only at times; under some peculiar environments they acquire malignancy. 4. Conversely, some bacteria that are naturally violent and malignant become attenuated in unsuitable media, so that inoculation produces only a mild type of the disease.

In order for it to be regarded as the cause of a disease the suspected bacterium must fulfil the following conditions: 1. It must be present in all cases of the disease. 2. It must not be found in the body except during the course of the disease; but this condition must be liberally interpreted, for there are conditions under which the same bacterium seems to be malignant at one time and not at another. 3. It must produce the disease when properly introduced into an animal susceptible to that particular disease.

Dr. Joseph Price, of Philadelphia, thought Senn's statement, that "at this time surgical pathology has almost become synonymous with surgical bacteriology," was rather too sweeping. Even Lister is not so enthusiastic over antisepsis as formerly. Too close following of the dicta of such teachers has often led to carbolic-acid poisoning in midwifery. The whole ground is covered by adopting the "gospel of cleanliness"—absolute cleanliness; and simple pure water is all sufficient. The speaker did not deny that there was some virtue in chemical surgery; in fact, chemical cleanliness will aid the surgeon; but it must not be carried too far, or it will impair the healing quality of the divided tissues, or even may fatally poison the victim. If cleanliness were maintained, Dr. Price would not dread germs except in the dressing. He had no confidence in the paraphernalia usually sold by surgical-instrument dealers; for, as a rule, they sell goods that have been handled many times by doctors who have wished to examine the stock. Dirt, whether under the finger-nails or about the dressing, is injurious.

Dr. L. G. Pedigo, of Roanoke, defended Listerism. Of course Lister went too far at first; but progress comes by stumbling and correction. It took Lister fifteen years to get professional attention directed to antiseptic surgery; but now, with its improved methods, it has come to stay its general principles are established. Germs cause suppuration and destruction of organic tissues; but chemical agents are sufficient to destroy them. He thought Dr. Price went too far in his claims for aseptic as opposed to antiseptic surgery. In fact it could hardly be called even aseptic, since he trusted to Philadelphia hydrant water for washing his wounds, boiling only a part of what he used. Yet if the report of the health officers of that city be true, that water is notorious for its impurities.

Dr. Thomas J. Moore, of Richmond, said the medical press has of late been too radical in its advocacy of asepsis, when in truth surgical practitioners of to-day are modifiers—are trimming off the angular points which

misshape the truth. Ten years ago a distinguished surgeon said that the doctrine of bacterial effect in surgery had come to stay only a few years, and it appears now that he was a prophet.

Dr. G. Betton Massey, of Philadelphia, stated that he had been a believer in the germ theory for years, and his convictions were so strong that he would think himself a murderer if he did not conduct his practice on this basis. Indeed, it is clear that the small minority of the profession who still say they do not, really do believe in germs. This is shown by the fact that they boil the water in which they keep their instruments. They say they do it to get rid of the "filth"—why not say "germs," or "bacteria?" Their acts speak louder than their words.

Dr. S. T. Earle, of Baltimore, Md., said that much of the discussion seemed to be simply on a matter of difference in the means employed to secure the same results. For example, one of the previous speakers sterilizes his ligatures in hot water in advance, and leaves them in the abdominal cavity, to be digested or absorbed, without risk; whereas, if he sterilized them by certain chemicals, they might not be absorbable. The important point in undertaking any operation is to decide what is and what is not obnoxious material to be used in the wound.

Dr. Price remarked that exceptionally few wounds unite if all the germs are destroyed. On one occasion he had to excise both mammæ on a woman—both being alike in size and condition. He determined to try chemical antisepsis on one and simple cleanliness with soap and water on the other breast. The side on which he used antiseptic dressings was slower in getting well than the other, which he dressed simply with occlusion pads, etc.

Dr. Blackford closed the discussion by saying that Dr. Price had discussed practice—not principles. The whole principle involved—whether by antiseptics or asepsis—consists in the effort to neutralize what Dr. Price refers to term surgical filth, but which is generally included under the head of bacteria.

A Successful Case of Colectomy for the Closure of an Artificial Anus was reported by Dr. Samuel T. Earle, of Baltimore, Md. The method used in the operation was that recommended by Dr. William Halsted, of the Johns Hopkins Hospital, which was found to be very satisfactory. The patient made a good recovery. The chief point brought out by the report of this case was the fact of the great strength of the fibrous coat of the intestine, and the reliance that can be placed upon it in all cases where it is necessary to suture the intestine, without resorting to plates or any foreign substance to strengthen the union.

Injuries of the Knee.—Dr. M. W. O'Brien, of Alexandria, read a paper entitled: "Injuries of the Knee: Their Treatment and Results. With Special Reference to the Prevention and Cure of Suppurative Action in and about the Joint." He thought it should be a surgical axiom, with reference to treatment of every wound of or near the knee joint, and of every congestive or inflammatory condition of that joint, that absolute rest by fixation should be given the entire limb from the body down. If serum is effused into the knee-joint cavity, draw it out antiseptically, and then elevate the foot, and put the entire limb up in plaster—the Bavarian dressing being the best—with the leg straight. This plaster dressing makes both extension and counter-extension, securely locks the joints, hold every muscle firmly but gently in its place, and puts the reflexes to sleep. He said that a knee-joint injury should never be dressed in a flexed position. This was contrary to the views of many surgeons; but experience and results prove that a flexed anchylosed leg is a nuisance, particularly so if the flexion is great. With fracture in a straight position perfect rest is secured. If pus forms, lay the joint widely open, wash the fluid out thoroughly, put in drainage tubes, and flush everything out as often as may be necessary with corrosive sublimate water, and improve the general condition of the patient by food and the use of quinine.

Acute Inflammatory Ear-ache.—Dr. John Herbert Claiborne, of New York, read a paper on "Acute Catarrhal Otitis Media." He placed his confidence in the following plan of treatment: 1. Hot ten per cent. solutions of cocaine instilled into the outer ear, retained from five to ten minutes. 2. Hot solutions of boric acid instilled into the outer ear, while spongio-piline soaked in hot water is applied over the whole ear surface. 3. Inflation by the bag and by the continuous method with the Eustachian catheter. 4. The administration of a drastic dose of Epsom salts. This he also uses as a systemic remedy.

After the acute stage is passed, blisters behind the ear may be useful, but do no good during the acute stage.

Gonorrhœa in Women.—Dr. George Tucker Harrison read a paper on this subject. Credit must be given to Noeggerath for first drawing attention to the serious nature of this disease. Experiments and investigations coinciding with clinical facts go to prove that all the secondary inflammatory processes, whether in the tubes, ovaries, peritoneum, or in the broad ligaments, not only may be produced by the gonococcus of Neisser, but in fact are so produced. He asserted that, with few exceptions, the wife of a man who prior to matrimony has been the victim of gonorrhœa, will sooner or later develop some form of the disease. He asserted further, that ninety per cent. of the causes remain uncured, and that of a hundred women who marry men who have had this disease, hardly ten per cent. remain healthy. He classified gonorrhœa in four groups: 1. Acute perimetritis; 2, recurrent perimetritis; 3. chronic perimetritis; and 4, ovaritis. Microscopic examinations have proven the existence of gonococci in pus taken from diseased tubes, and it is generally conceded that most of the inflammatory conditions of the tubes can be traced to this disease. Bumm denies this, and claims that the gonococcus of Neisser is only able to penetrate "cylindrical epithelium." But others state that it is capable of penetrating even striated squamous epithelium. As to treatment, prophylaxis naturally claims first and careful consideration. Dr. Harrison thinks it hardly possible to stamp out this disease. But that the general practitioner can correct the evil to a large extent. The gynecologist should be careful in dilating the womb of a woman who is affected with gonorrhœa, as the disease is so easily carried into the uterine cavity, thence into the tubes, etc.

Hypnotism as a Therapeutic Agent was the title of a paper read by Dr. William Lee Howard, of Baltimore, Md., in which he spoke of its uses and abuses, concluding with the recommendation that laws should be enacted to prevent the practice of hypnotism except by regularly licensed responsible physicians.

Sexual Hypochondriasis and Perversion of the Genesic Instinct.—Dr Irving C. Rosse, of Washington, D. C., read a paper with this title. Omitting reference to such subjects as spermatorrhœa, venereal excesses, malformations of the genital organs, and the high degree of excitement often found among the insane, he limited his paper to the consideration of the manœuvres of either sex to produce venereal orgasm independently of the conditions of normal coitus, and known comprehensively as genital abuse. Of all hypochondriacs of either sex, those who refer their sufferings to the genital organs, such as the onanists, nymphomaniacs, syphilophobes, etc., are the most miserable. It is an error to suppose that aberration of the genesic instinct is confined to our species, time, race, or latitude. Bestiality or sodomy has perhaps existed from all time. Juvenal mentions that donkeys were much sought after by women. A quotation from Plutarch indicates that there were relations between animals and human beings—men and women—in the Latin Empire. In our day this crime is less prevalent, though far from rare in large cities. The speaker mentioned numerous instances of sexual perversion which had come under the notice of the police in various cities in this

country and Europe. A study of these cases shows that the question of sexual perversion is one of social hygiene touching mental pathology in many points. Lawyers and doctors and juries want to know whether such cases are criminal in their nature or are the result of insanity. Physicians recognize that continuous suggestion, or the reading of lewd literature, or excessive indulgence in fondling embraces under improper circumstances, etc., do affect the lower lumbar reflexes in such a way as to bring about sexual hypochondriasis, not to mention their influence as wide disseminators of immorality and as teachers of crime. Many of the methods of societies for preventing vice and bringing about prohibitory legislation as to vicious literature, etc., though well meant, are both reprehensible and impracticable. Over-zeal leads to false philosophy and sophistry like that of the prohibitionist who would enact summary laws. The treatment of such cases of unnatural practices as have been referred to consists in prevention and education, with employment of proper medical and surgical measures. Self control should be inculcated, especially about the epoch of puberty. As an adjuvant nothing is better than gymnastic and athletic training. A verification of the judiciousness of this advice is often found in champion athletes, many of whom are temporarily impotent.

The Treatment of Hard Tumors in the Pelvis was the title of a communication presented by DR. JOSEPH PRICE, of Philadelphia. He advocated early treatment of small abdominal and pelvic tumors before real danger develops. Dermoid tumors especially require early attention.

One great danger of small, hard tumors, especially in the pelvis, is that they interfere with conception, and often with delivery. A dermoid on one side may bring on abortion after abortion, when the other side is entirely healthy, and so cause much useless suffering, both mental and physical. Hard tumors of the uterus, whether large or small, are accompanied with just such dangers as have been described, and the longer they are allowed to grow, and the more they are interfered with in a meddlesome way, the more dangerous do they become.

Long-continued Administration of Digitalis.—DR. F. M. BROOKES, of Fairfax Station, reported a case in which digitalis had been administered continuously from November, 1889, to September, 1892, the dose given being thirty-five drops of the tincture three times daily.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, April 13, 1892.

H. P. LOOMIS, M.D., PRESIDENT, IN THE CHAIR.

DR. GEORGE P. BIGGS presented the lungs from a man who had been admitted to the cells of Bellevue Hospital with delirium tremens, associated with a very high temperature, and signs of pulmonary consolidation of the lower lobes. The temperature reached 106° F. before death. The autopsy showed consolidation of both lower lobes of the lungs, having a somewhat lobular form, and a peculiar degenerated, cheesy appearance. Microscopical examination seemed to point to a lobular pneumonia. At the apex of one lung was a small cavity, about one centimetre in diameter, surrounded by a pigmented fibrous area of considerable extent. Scrapings from the surface of the consolidated portions were examined, and found to contain large numbers of tubercle bacilli.

DR. W. P. NORTHRUP said that the uniform distribution of the light spots seen in the specimen were very much like those so frequently seen in the broncho-pneumonia of children. From their distribution and general appearance he was inclined to think that the specimen showed a broncho-pneumonia with infiltration of the bronchioles.

Acute Yellow Atrophy of the Liver.—DR. BIGGS also presented gross and microscopical specimens from a case of acute yellow atrophy of the liver. The patient was a young woman, twenty-one years of age, who was admitted about 1 A.M. on April 8th, in a fairly rational condition, but unable to give a trustworthy history of her illness. She was found to be markedly jaundiced, the pulse was about 50, and the temperature 97° F. Physical examination showed the pelvic organs, and, in fact, all the other organs, normal excepting the liver, which was diminished in size. The jaundice became very intense, and she had frequent tonic spasms of the upper extremities and almost constant movements of the lower extremities, but not of a spasmodic or convulsive character. She passed gradually into a low form of delirium, then into a stupor, and finally into coma. The pulse remained slow until just before death, when it ran up to 130, and the temperature continued to be subnormal until just before death, when it suddenly rose to 105° F. The only special point of interest at the autopsy was the liver, which was markedly diminished in size, and weighed only thirty ounces. It was very soft and intensely congested, with the exception of a few slightly depressed areas, which were of a reddish color. Microscopical examination showed that there was an almost entire absence of liver-cells, and very extensive fatty degeneration, which was also present in the other organs.

Rupture of an Aneurism of the Abdominal Aorta into the Psoas Muscle.—DR. J. S. THACHER presented a specimen of this kind. The patient entered St. Luke's Hospital complaining of pain in the left side of the abdomen, and examination showed a tumor in the left lumbar and iliac regions, the nature of which could not be determined. Exploratory laparotomy was performed, and a pulsating tumor found in the iliac region. The patient died shortly afterward from acute peritonitis. The autopsy showed an aneurism pressing upon the first and second lumbar vertebræ, whose bodies it had eroded. Behind and to the right was an opening into the aorta, about one and a half inch in diameter. The left side of the aneurism had ruptured into the psoas muscle, and had extended inside of this muscle to a point about half an inch below Poupart's ligament. It had formed quite a large cavity in the muscle, which was found filled with blood-clots.

Sarcoma of the Kidney.—DR. H. J. BOLDT presented the above specimen. It had been removed from a woman, thirty-six years of age, a patient of Dr. Burke, who had presented herself to the speaker on January 4th, complaining of a pain in the lower and right hand portion of the abdomen, which had existed for about one year. She had had three normal labors. Examination showed a tumor, most prominent to the right of, and a little below, the umbilicus, and independent of the pelvic contents. A solid tumor of the right kidney was diagnosticated, and three days later the tumor was removed without difficulty by abdominal section. According to his invariable custom, the pedicle was tied with catgut. The peritoneum was closed over the cavity by a running catgut suture, no drainage being used. The other kidney appeared to be normal. The abdomen was then entirely closed, and the patient made a good recovery.

A Large Hydronephrotic Kidney.—DR. BOLDT presented a specimen which had been removed from Miss L——, a patient of Dr. Vandegrift, aged twenty-one. This patient began to menstruate when twelve years of age, the flow being regular and normal in quantity, but for the past seven years it had been preceded and accompanied by severe pain in the right ovarian region, which was also present in the inter-menstrual period, but was not so severe. Quite recently, also, there had also been pain in the right lumbar region. The bowels were constipated, and micturition frequent. She was poorly nourished, had a rapid, small pulse, and slight fever. Examination showed a tumor sensitive to touch, freely movable, and extending above the umbilicus, and it was thought to be an ovarian cystoma with a long pedicle, until an examination under anæsthesia, just prior to the operation, showed that it was independent of the ovary, and that it was

obably a tumor of the kidney. Abdominal section con-med this diagnosis, and showed so much destruction of is kidney, without any apparent involvement of the her kidney, that it was deemed advisable to remove is one rather than to simply drain it. The pedicle as accordingly tied with catgut, and drainage established rough the loin, and the peritoneum closed over the c, and the abdominal wound closed. With the excep-on of periodical elevations of temperature, which yielded omptly to the administration of quinine, the patient ade an uninterrupted recovery.

Dr. Boldt also showed specimens from two cases of arian cystoma, in which the condition had been mis-ken for pregnancy. One was a fibro-cystic tumor of e ovary, and the other an ordinary ovarian cystoma. bro-cystic tumors of the ovary are comparatively re. Both cases made uneventful recoveries after op-ation.

Removal of a Tumor of the Kidney from a Child Aged wo Years.—Dr. L. Emmett Holt presented a tumor the kidney which had been removed from a child aged o years. It had not been as yet examined microscopi-lly, but was probably a sarcoma. The patient had en under observation only three weeks prior to the op-ation, and the only history obtainable was that the elling had first been noticed in the right side of the ab-men, about six months before, appearing first in the re-on of the loin, and growing slowly. There had been pain or difficulty in micturition, and no such symptoms re observed after admission. The urine was repeated-examined, but with negative result. There was only derate cachexia. The tumor occupied the greater rt of the abdominal cavity, extending in the hypogas-c region nearly over to the left spine of the ilium, and owding the liver up into the hypochondriac region; it cupied almost all of the right side of the abdomen, was istic to the feel, and had a distinct sulcus in its centre, hich gave rise to some difference in opinion as to ether it was cystic or solid. The tumor was removed sterday by Dr. Abbe, through a lumbar incision. The eration lasted forty-five minutes, there was very lit-blood lost, and it was followed by very little shock. the present time the child is doing exceedingly well. out nineteen out of every twenty children operated for such tumors die within a few hours after the eration, from shock. It had not been necessary to sect any ribs in order to remove the tumor. The tu-or weighs two and one-quarter pounds, and appears to ve originated from the outer and anterior aspect of the lney. The ureter was patulous throughout.

Dr. Boldt said that some time ago, in removing a much ger tumor of the kidney from an adult, he had been mpelled to resect two ribs before he could enucleate e tumor.

A Safety-pin Impacted in the Œsophagus.—Dr. Holt sented a specimen from such a case. It had been re-oved from a child, aged nine and a half months, who d been under observation for a rather protracted pneu-onia, to which it finally succumbed. At the autopsy a fety-pin of small size was found impacted in the œsoph-s, about half an inch from the cardiac orifice, the ft of the pin lying along the œsophagus. It had pro-ced an ulceration of the œsophagus, and a certain ount of cellulitis. The pin was not corroded, it was g open with the hinge end downward, in the position which it was swallowed. As the ulceration was very superficial, it is probable that it had not been there more n ten days. There had been no symptoms referable this foreign body, except that, about ten days before ath, there was quite marked dyspnœa for a day or two h no obvious cause. This disappeared spontaneously, returned about eight hours before death, and continued il death. As the autopsy showed well-marked ca-rhal laryngitis, this may have been the cause of the pnœa. The child was able to drink well from its bot-up to within eight hours of death.

Stated Meeting, April 27, 1892.

H. P. Loomis, M.D., President.

The Diagnosis of Tumors of the Bladder by Microscopical Examinations.—Dr. F. Ferguson presented a series of specimens illustrating the different varieties of tumors of the bladder, their situation, and general characteristics, and dwelt particularly upon the important aid in diagnosis rendered by microscopical examinations. Exclusive of the cystoscope, he believed that the best method of making a diagnosis of tumors of the bladder was by continuous microscopical examination of the urine. This method of diagnosis is of comparatively recent date. The method which he adopted consisted in collecting the entire quantity of urine voided during the twenty-four hours, and collecting the sediment from this by filtration through cheese-cloth. Small fragments of tissue which are found in this sediment are hardened in alcohol, embedded in celloidin, and one or two hundred sections made and examined with a low power. If this preliminary examination reveals anything of importance, the sections are stained and examined with higher powers. In some cases a sufficient number of fragments may be obtained from a small quantity of urine, and may not require to be examined for several days at a time. The present method of removing a small quantity of urine with a pipette and examining one or two slides is very unsatisfactory, but by making repeated examinations of a large number of sections of tissue, much more valuable information can be obtained, and the speaker thought a more general adoption of this mode of examination would soon greatly enlarge our knowledge of tumors of the bladder. By this method he had made the diagnosis on several occasions, and had had the satisfaction of having its accuracy confirmed by subsequent operation.

Tumors of the bladder had, up to quite recently, been considered to be comparatively infrequent, and this was chiefly owing to the fact that at post mortem examinations the bladder is seldom subjected to the same careful examination as were the other parts of the body.

Dr. H. J. Boldt asked how long the diagnosis of these growths had been made in this way, for he knew that Dr. Heitzmann had been engaged in such work for a number of years. He would also like to know what precautions were taken to prevent the decomposition of the urine while the total quantity for the twenty-four hours was being collected.

Dr. Ferguson said that he supposed such examinations had been made only during the past twenty years, and then chiefly by German pathologists, who had reported occasional isolated cases. When speaking of the comparative newness of this method, he had referred particularly to the examination of small fragments, and the importance of making such examinations systematically. No special precautions were necessary to preserve the urine for twenty-four hours, as during this time it was not likely to undergo much change, and as the specific gravity of tumors was much greater than that of the urine—1.035 to 1.045—the fragments sunk to the bottom quickly, and were therefore quite easily collected.

Dr. Samuel Alexander said that he had been deeply interested in the paper, because he knew of no department of genito-urinary surgery where there is more need of such a contribution than in the pathology of tumors of the bladder, and previous writers had made very vague and confusing statements. He agreed with the author that this lack of accurate knowledge was chiefly due to the want of attention paid to the condition of the bladder at autopsies. It was certainly not to the credit of the profession that tumors of the bladder could grow to the size of those presented before any accurate diagnosis was made. Professor Guyon, in a paper read before the French Congress two or three years ago, said that it was the greater duration and persistence of the hemorrhage, in spite of rest and position, which was distinctive of tumor of the bladder; but such hemorrhages

are also present in the so called primary tubercle of the bladder, and in certain forms of chronic cystitis. Sufficient attention had not been called to the fact that operations were sometimes performed for supposed neoplasms in the bladder, when, in reality, the hemorrhage was due to certain fungous growths from the mucous membrane. Professor Guyon asks if these represent an early stage of villous growths, or if they are simply the result of inflammation, or due to the destruction of the mucous membrane in places, causing this appearance of villosities. The speaker said that the presence of vessels and cylindrical epithelial cells would seem to indicate that they are true villous growths.

The method described in the paper for the microscopical examination of the *débris*, is most excellent, but it would require long experience and close study before such examinations would yield us thoroughly trustworthy results. For instance, if the portions examined are from villous growths, nothing could be affirmed concerning the character of the tumor, as these growths often spring from the surface of other tumors. He had met with two cases where there were a number of such small growths, and microscopical examination made after the death of these patients showed a carcinomatous deposit in the bladder-wall, which had not been observed even after the most careful examination. If a tumor be limited to the posterior wall of the bladder, by placing the patient on the back, and completely emptying the bladder, one can, with one finger in the rectum and the other over the pubes, outline the position of the tumor much better than it can be done with a searcher and with fluid in the bladder.

He would like to ask the author which variety of tumor he had found most common, and in what proportion of cases does the growth involve the mucous structure of the bladder.

Dr. Ferguson said that he had found the papilloma most frequently, although it was not uncommon to find a papilloma mixed in with some other variety. He could not give the exact proportion of cases in which the muscular structure was involved, but he thought they were very few.

Malignant Adenoma of the Uterus.—Dr. Elizabeth N. Cushier presented a specimen of malignant adenoma of the uterus, which had been removed from a patient, fifty-six years of age, who had passed the menopause about eight years. The first symptoms of the disease were noticed about nine months ago, at which time there were slight hemorrhages from the uterus and some pain referred to the right side. Last fall, the symptoms becoming more severe, she was sent to the infirmary, when portions of tissue were removed with the curette, and submitted to Dr. J. S. Ely, who reported that the disease was a malignant adenoma. The uterus, when removed one or two weeks later, showed on section but slight involvement of the mucous membrane, no fungosities except in one small spot, and a small mucous polypus near this point, in addition to the adenoma, which formed a circumscribed mass about the size of a bean. It was not until a section had been removed from the uterus that the whole organ was found to be extensively diseased.

Dr. J. S. Ely said that the intention in calling this "malignant" adenoma was to distinguish it from adenomatous hyperplasia, a hyperplasia of all the elements of the mucous membrane, but not involving the deeper tissues.

Interstitial Myocarditis.—Dr. George P. Biggs presented specimens illustrating interstitial myocarditis. The specimen was from a man, sixty-two years of age, who was admitted to the New York Hospital on March 5, 1892. He gave a history of previous specific and malarial infection, and of intemperance, but the family history was negative. For three weeks he had been in bed, suffering from marked dyspnœa and marked prostration, associated with cough and bloody expectoration. On admission his pulse was 120; respiration, 40, and temperature, 97° F., and physical examination showed moist râle over both sides of the chest; cardiac sounds very feeble no murmurs. The first sound was heard most distinctly in the fifth space, six inches to the left of the median line, and the heart action was rapid but regular. There was moderate general anasarca. Examination of the urine showed it to have a specific gravity of 1.020, and to contain a trace of albumin, with hyaline casts. The expectoration continued to be bloody. He died on May 10th, and the autopsy showed general subcutaneous œdema, and fluid in all the serous cavities. The heart was about twice its normal size, and its valves were all normal. The cavity of the left ventricle was dilated the left wall was 2¼ ctm. and the anterior wall ¾ ctm. in thickness. This marked diminution in the thickness of the anterior wall was due to very extensive so called "interstitial myocarditis," which was also seen in the left half of the interventricular septum. The muscular substance had been almost entirely replaced by dense fibrous tissue, and attached to the surface were numerous firm thrombi. The marked hypertrophy of the uninvolved portion, the speaker considered to be due to the extra work thrown upon it by the very great loss of power in the affected portion. The remaining cavities of the heart were all moderately hypertrophied and dilated. In the right auricular appendix was a soft thrombus. In the left coronary artery, 2 ctm. from its origin, there was extensive calcification over an area 1½ ctm. in length. On opening the vessel, a thrombus was also found at this point, producing complete occlusion of the vessel. The specimen showed very clearly the primary degenerative character and distinctly conservative nature of the lesion known as "interstitial myocarditis." The lungs contained numerous hemorrhagic infarctions of recent formation. The other organs showed only the lesions of chronic venous congestion.

The President remarked that Sir William Gull had written an article in which he claims that plugging of the coronary artery by a thrombus produces interstitial myocarditis, while plugging of the small branches of the coronary artery, as would occur in fibrous thickenings always produces fatty changes in the heart.

Tuberculosis of the Genito-urinary Tract.—Dr. F. Tilden Brown presented a patient, and exhibited microscopical slides illustrative of tuberculosis of the genito-urinary tract. The tubercle bacilli were so numerous as to form almost a pure culture. The patient, a sailor while on shipboard, and poorly nourished, first noticed very slight hæmaturia, which disappeared after a time. About one year ago it again became troublesome, and he went to the Marine Hospital and was examined with the cystoscope, but he states that for some reason the examination was unsatisfactory. The hæmaturia was not relieved. He first came under the speaker's care about two weeks ago, and was then passing small blood-clots. Rectal examination showed slight enlargement of the lateral lobes of the prostate, and two tender nodules near the apex of the seminal vesicles. There was apparently no disease of the lungs, but the patient's voice was a little husky.

A Nematode Parasitic Worm in the Urethra.—Dr. Brown also exhibited specimens and drawings of a nematode parasitic worm taken from the urethra of a man forty-eight years of age, a native of this city, who has never lived in the tropics. Has had a urethral discharge for seventeen years. He has only had gonorrhœa once, about three years before this discharge began. Last summer the patient was referred to the speaker by Dr. Brewer and a speculum examination showed nothing except a ragged appearance of the mucous membrane of the urethra from the membranous portion to the meatus, with some œdema, and an unusual prominence of the papillæ. When this examination was made before urination white muco-purulent secretion was seen, and this was particularly abundant in the bulbar urethra. Various methods of treatment were tried during the next two months, but

vithout benefit. Treatment was then discontinued for even months. On March 27, 1892, there was a more rofuse watery, muco-purulent discharge, which he attrib- ted to an unusually violent coitus. The secretion was xamined microscopically for tubercle bacilli, but none 'as found. In one particularly thick mass, however, iere was an unstained body which resembled a nema- ode worm. Previous to this, examinations of the urine ad been negative, but albumin and blood were now ound in the urine. About eight or ten worms were found n each mounting. What he had at first supposed to be xtraneous shreds, proved after further study to be por- ons of the organism. He was not yet prepared to say here they originated.

Atrophy of One Hemisphere of the Brain.—Dr. E. D. ISHER presented a brain which had been removed from person, seventeen years of age, who had had cerebral emiplegia in childhood, probably at birth. The patient esented the usual condition—hemiplegia, marked con- actures, non-development of the bones of the upper id lower extremities, exaggerated reflexes, imbecility, id epilepsy, and the speech was limited to a few simple ords. The side of the brain opposite the paralysis of e body was very much atrophied, and the convolutions ere so much shrunken that it seemed almost as if this ortion of the brain had been subjected to the contract- g action of nitric acid; the cortex was at least one-fifth inner than that of the opposite side, and the ventricle i that side was very much dilated, and filled with fluid. he hemisphere of the cerebellum on the opposite side is also considerably atrophied, and there was degenera- on extending from the cortex through the internal cap- le and pons, down to the cord. No microscopical ex- ination had yet been made.

The chief point of interest was in regard to the cause this condition; was it the result of an injury at birth, was it due to a meningeal hemorrhage? The person is of course too old to furnish evidence of any hemor- age; there was nothing in the condition of the vessels indicate any intra-cerebral trouble, so that the condi- n must have been due to either a meningeal hemor- age, or to an encephalitis. It was another one of those ses showing the futility of any operation for the relief such a condition, unless undertaken in the second or rd year of life, and even at this time, it was extremely ely to prove fatal.

Minute Hemorrhages of the Brain.—Dr. J. S. Thacher esented a brain showing numerous minute hemorrhages the substance of the brain, the result of a blow on the id. The specimen was removed from a person who d fallen from a high scaffold. It was not uncommon find such hemorrhages after a severe blow on the head, d he thought he had seen them also in cases of appar- concussion of the brain. In one case he recalled re were first symptoms of concussion, then deepening na, and death, and only these minute hemorrhages re found.

Ruptured Tubal Pregnancy.—Dr. H. J. Boldt pre- ted a specimen of this condition, which had been re- ved from a woman who had previously given birth to eral living children. For the past four or five years had been treated for right salpingitis. She went ee weeks past her menstrual period, and was then ed with griping pain in the right ovarian region, ac- panied by a slight discharge of blood. When ex- ined by the speaker on the day before yesterday, pre- us to the operation, the uterus was found posterior, and intra-peritonal hæmatocele, instead of being retro- rine, as is usual in these cases, was ante-uterine. The ration was difficult, but the patient is doing well.

n answer to the question, "Why was not this a case of natoma?" Dr. Boldt replied, because if it were a natoma there would not be such a history, which was y characteristic of tubal pregnancy. The peculiar, k, chocolate-colored blood which was discharged n the uterus he had never seen except in connection with a tubal gestation. Besides this, the villi could be seen in the specimen.

Interstitial and Submucous Fibro-myoma of the Uterus.—Dr Boldt also presented a specimen of the above, which he had successfully removed by abdominal hysterectomy. Menstruation had been becoming more and more painful and profuse for the past eight years, so that at the time of the operation, March 6th, the flow recurred at intervals of a little over a week, and lasted for ten or twelve days. She was thirty-two years of age, had been married ten years, and had never been pregnant. The menstrual pain was unbearable, and required the free use of narcotics. She was treated for four months with galvanic currents of from fifty to one hundred milliampères, and was given internally the fluid extract of hydrastis, and although the bleeding became less profuse the pain was not relieved. At the operation, after tying off the the structures on either side, the bladder was separated, after first distending it partially with fluid to show its attachments more clearly. In this way injury during the operation is avoided. This method was suggested by Dr. Mackenrodt, the first assistant of Dr. A. Martin. Under the guidance of a finger the vagina was then pierced posteriorly from above, and sutures passed all around the cervix. The stumps of the broad ligaments were then stitched to the vagina, and the peritoneum closed over the wound. The cervix was also removed.

The speaker said that in 1889 he had first removed the entire uterus for myoma, and although at that time he had used a somewhat different method, the principle of removing the cervix also, in order to avoid the liability of sepsis, was the same. In November of the same year he had first publicly commended this method of complete removal where the condition seemed to demand a hysterectomy, but where the patient's condition rendered this operation very dangerous it should not be forgotten that supra-pubic amputation can be done more quickly and safely.

Abscess of the Liver—Death from Septicæmia.—Dr. R. W. Greene said that one year ago, last June, he was called to see a woman, forty-nine years old, who was suffering from severe colicky pains in the left side, just below the free border of the ribs. The fæces were clay-colored, but there was no jaundice. On March 17, 1891, she had another such attack, and this time there was deep jaundice within the first twenty-four hours, and clay-colored stools. After a few days, a tumor appeared beneath the surface of the liver, to the right of, and above, the umbilicus, and separated from the liver by the tympanitic resonance of the transverse colon. It increased in size, and on April 8th, an aspirating needle withdrew a very peculiar-smelling pus. On the following day, one and one half pint of this pus was evacuated, and the patient made a good recovery. She recovered quickly also from a third attack of jaundice and pain, which occurred last January, but in the latter part of February she began to have severe chills, and an irregular temperature, reaching at times to 106° F. It was then noticed that the sinus leading from the abscess had closed deeply. There were no tender spots, and no pain, and the liver was apparently not enlarged. On April 18th, she died, and a partial autopsy was permitted. The apex of the gall-bladder was found adherent to the small intestine, and at this point there was a perforation between the two; the gall-bladder was very much thickened, and contained rather thick pus. Following down the common duct and the gall-ducts, these were found to be greatly distended with the same material. Infection must have come from the communication between the gall-bladder and the intestine, the abscess being entirely confined to the gall-ducts. Two or three small pieces of stone were voided through the sinus, and a piece of stone was found at the point of perforation.

Abscess of the Lung—A Malformation of the Stomach.—Dr. J. S. Ely presented specimens which had just been removed from a man, thirty-six years of age, who

had been admitted to the Roosevelt Hospital on March 8, 1892. Three days before this, he had been suddenly seized with severe dyspnœa and orthopnœa, with some palpitation of the heart, but no cough. There was moderate cyanosis, the respirations were 20, and the pulse 130, and of high tension. There was poor pulmonary resonance, inspiration was inaudible, and expiration was prolonged. He improved rapidly under the administration of nitrite of amyl, nitro-glycerine, and iodide of potassium, and he was discharged from the hospital in about one week. He was readmitted two weeks later, on account of a return of the dyspnœa, this time accompanied by cough and rusty expectoration; pulse, 116; respirations, 48, temperature, 99° F. The physical signs were about the same as before, but the urine now contained albumin and hyaline casts. He was somewhat relieved by nitro-glycerine gr. $\frac{1}{100}$th every two hours, with chloral and potassium bromide, and on April 19th he was allowed up. The next day he went into the yard, and returned with a chill. The temperature rose to 105° F., there was cardiac palpitation and dyspnœa, and the next day there was found to be a clear serous effusion in the right pleural cavity; the patient was much prostrated and his expectoration was bloody. His temperature ranged between 101° and 104° F. until the morning of the 25th, when it fell to 98° F. He died of exhaustion on April 26th. At the autopsy, forty ounces of serum and some recent fibrin were found in the right pleural cavity. There was a spot in the middle lobe of the lung which on section proved to be an abscess of the lung, surrounded by pneumonia. There was also a rather unusual malformation of the stomach—a sort of hour-glass contraction—and as there was no thickening of the muscular walls, and hence no irregular contraction to account for this peculiar curve, it was evident that it was a distinct indentation of the lesser curvature of the stomach. The heart was very much hypertrophied, and the kidneys contracted, showing the lesion of chronic diffuse nephritis. The condition of the heart, and especially of the kidneys, would explain the dyspnœa.

The Society then went into executive session.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, September 26, 1892.

GEORGE HENRY FOX, M.D., PRESIDENT, IN THE CHAIR.

Nominations.—DR. FOX was renominated, but said he must, in accordance with a promise made a year ago, positively decline to run for a second term.

DR. A. S. HUNTER, ex-President and member of the Comitia Minora, wished to make a nomination and precede it with a statement. The impression seemed to have gone abroad that the Society was a sort of close corporation, managed by a committee which also controlled the election. While he did not think there was any foundation for this belief, yet inasmuch as during the past twelve years the office of President had been, with one exception, filled by a member of the Comitia Minora, he now proposed to nominate one who had never been a member of that committee. He nominated Dr. Charles Carroll Lee.

Other nominees for *President* were: Drs. Charles L. Dana and Seneca D. Powell; for *First Vice President*, Drs. C. L. Dana, William Stevens, Simon Baruch, Thomas H. Holgate; for *Second Vice-President*, Drs. William Stevens, Robert Abbe; for *Secretary*, Dr. Charles H. Avery; for *Assistant Secretary*, Dr. William E. Bullard; for *Treasurer*, Dr. John S. Warren; for *Censors*, five to be elected, Drs. G. H. Fox, L. C. Gray, A. S. Hunter, William Stevens, Samuel Lloyd, C. H. Knight, Van Valzah, R. Van Santvoord, Joseph Collins, J. W. Brannan. A large number were nominated as delegates to the State Medical Society, thirty of whom are to be elected; election to take place at the annual meeting next month.

The Operative Treatment of Tubercular Lymphadenitis.—DR. SAMUEL LLOYD read this paper. In the cases of enlargement of the glands in the neck, which had appeared at his clinic, he had looked upon the condition as one of local tuberculosis, and tried to trace the place of entrance of the tubercle bacillus. This might be in disease of the scalp, of the external auditory canal, the pharynx, etc., but the most common seat of entrance was in the mouth or nose, from decayed teeth, ulcerated gums, tonsillitis, rhinitis. Whenever the point of origin for the disease could be made out with certainty, one found the glands nearest thereto most advanced in tubercular change, and giving the impression that they had been the first attacked. These glands also often showed a larger number of tubercle bacilli than those farther away. Often, however, one's examination failed to reveal the origin of the disease. Occasionally there was a family history of tuberculosis. Often the enlarged glands followed one of the eruptive fevers, or a cold in the head or sore throat. In no case had he been able to make out a primary pulmonary invasion, in spite of the statement which had been made that the lungs or bronchial glands were usually the starting-point of the disease. A further proof that the bronchial glands were not the usual starting-point was the fact that removal of the cervical enlarged glands often ended its progress. The bacilli varied in number, according to the size and extent of involvement of the glands.

Clinically, four stages or classes might be recognized. 1. The simple inflammatory stage without degeneration but with distinct local points of infection; 2, simple glandular enlargement without recognized points of infection, and with or without a distinct tubercular history; 3 degenerated glands; 4, calcareous glands of small size—hard tubercles.

The cases in the first stage—the simple inflammatory—were the most satisfactory to deal with, for removal of the infected areas and paying attention to the constitutional condition often gave complete relief. No external applications should be made; decayed teeth, etc., should receive attention, and should relief not be prompt, extirpation of the enlarged glands should be undertaken. A careful physical examination should be made in every case. The second class of cases required essentially the same management. In cases where the glands were large but not ulcerated, absorption could sometimes be caused to take place by injections, as of carbolic acid, iodine chloride of zinc, iodoform in ether, glycerine, or in olive oil. The author had used iodoform in glycerine, ten per cent. of the former; the bottle stood in boiling water. The amount injected depended upon the age of the patient and size of the gland, varying from five minims to half a drachm; was gradually increased, and employed two or three times a week, but not always in the same gland. Strict asepsis must be observed. Rapid absorption often followed, and in one instance commencing constitutional infection manifest in the lungs promptly disappeared.

DR. W. H. PORTER was glad the fact had been recognized in this paper that tuberculosis was not an inherited disease; that no more than a predisposition to it could be inherited, while actual infection must take place before it could gain a foothold in the system. The point had also been very properly made that the bronchial glands were not a common starting-point, and this was the more important as, unlike the cervical glands, they were not within reach of the surgeon. The proper treatment was early removal of the local foci and attention to the constitutional condition.

DR. J. E. KELLY bore testimony to the efficacy of the removal of enlarged tubercular glands, and said that in cases in which it had been necessary to remove the internal jugular vein during the course of the operation, no untoward physiological result had followed.

Prophylaxis and Treatment of Cholera Asiatica.—DR. PAUL GIBIER read a brief paper with this title. H

ferred to experiments which he had made with the omma bacillus of Koch, in 1885, which had convinced m that Asiatic cholera was due to infection of the di- stive tract by this bacillus. Based on this view of the ature of the disease, treatment was recommended which id for its object removal of the toxic matter already rmed, and prevention of multiplication of the germs. rther, it was desirable to restore to the system the fluid hich had been lost in the dejecta. For the latter pur- se he preferred intestinal irrigation, with a solution of loride of sodium of the temperature of the blood, to bcutaneous injections. These injections also had a eansing effect on the bowel. One might add a non- xicant antiseptic, such as boracic acid or peroxide of drogen. A cathartic of oil or sulphates should be given uring the premonitory diarrhœa, to be followed by some sinfectant, preferably, from his view, bichloride of ercury. Sulphuric acid lemonade was destructive of e cholera germ.

Remarks on the Prevention and Treatment of Chol- a.—Dr. E. O. Shakspeare, of Philadelphia, made some marks upon the paper, based largely upon an official re- rt prepared by him in 1886. During those investiga- ons, which included an inquiry into the value of Ferrán's eventive inoculation method, he had reached the con- usion that immunity from cholera could be induced in inea-pigs at least, and those and more recent experi- ents by German and other biologists led him to believe at in time an efficient and safe way would be discovered r rendering the human subject immune. Further, he ought the State would come to rely upon preventive in- ulation for stopping an epidemic where other means d failed. While the disposition in Berlin at that time, d since, had been to ignore Ferrán, yet the work being ne there at present was more or less in line with that ne in Spain seven years ago. This mode of prevention uld in time prove to be the most potent means of ecking epidemics of cholera in such countries as India, ere it was impossible to enforce personal hygiene.

Speaking of quarantine, he said that in England mense sums of money had been expended for local giene, and there quarantine might seem less necessary; t in this country, with its immense area even so enor- us a sum spent honestly would fall far short of estab- hing such conditions as would prevent the spread of olera, and therefore quarantine restrictions were abso- ely necessary. They should, however, be carried out such a way as to be as little as possible a burden to ritime trade. Provision should be made for removal the ship's inhabitants the moment she arrived at the arantine station, and she should be allowed to go as on as possible to her dock to unload her cargo. The arantine officer and his agents should give especial at- tion to all cases of diarrhœa. It was impossible to tain this knowledge by half an hour's inspection of a p's passengers. Those passengers were almost the sole ans of conveyance of cholera into a port, and in the e of this country the danger lay almost exclusively h the immigrant class. Even in Bengal, where cholera s endemic, Englishmen were hardly ever affected, the hy natives being almost alone the victims. At quaran- e a very broad distinction should be made between in and steerage passengers, not because the latter were or, but because the conditions surrounding them and ir personal habits favored the spread of cholera.

Regarding the treatment of cholera, the speaker ught the methods of intestinal antisepsis and of intra- ous or subcutaneous injections of saline solutions ecially worthy of further trial. He was strongly in- ed to recommend salol, or one of its congeners, for e premonitory stage, and up to the fully developed ge.

Dr. Gibiér closed the discussion, and said that an ap- ent discrepancy in the results of experiments upon nea-pigs, made by different physicians, had depended on the distance of removal of the culture. Germs from the cholera patient, or near cultures were more fatal than remote cultures. The lesson taught by the infectious diseases should induce physicians especially to cry out against those social conditions which to-day led to a part of every community being filthy and living in most unwholesome surroundings.

The Treatment of Cholera Morbus.—Dr. Richard Van Santvoord, said that in presenting this paper he had yielded to a request of the President, while having nothing new to offer. Acute diarrhœa might be divided into two forms, connected by intermediate cases of mixed character: 1, Acute dyspetic or irritative diarrhœa, being caused by taking some indigestible substance which underwent fermentation and putrefaction; 2, the cholera group, including especially Asiatic cholera. These had also been spoken of as the toxic diarrhœas, the toxic matter being generated by microbes. In irritative forms of diarrhœa a variety of bacteria might develop and add to the symptoms.

In diarrhœa due to cholera morbus it was usual to rely upon evacuants, stimulants, aromatics, and antiseptics. Opium given before the bowel had been cleared worked injury by locking up the irritant, whereas later it was curative because, as the author thought, acting as a physiological antidote to the poisonous ptomaïnes. To effect this object it should be given in full doses for a short period. Alkalies and aromatics probably acted similarly to opium, though being less efficient they were not applicable alone in severer toxic cases. It had been supposed that aromatics were intestinal antiseptics, but it was questionable whether they reached the point at which they could thus act. As to antiseptic remedies, such as salol, hyposulphite of soda, salicylate of soda, napthalin, mercurial preparations, etc., he had been disappointed in all. Subnitrate of bismuth, which the author thought acted in part at least as an antiseptic, had been the only exception. It was useful in less severe cases where opium was not indicated, and in others after this remedy had done its work. He also advised washing out the lower bowel. In infants the absolute withdrawal of milk might be indicated. Good stomach digestion should be secured by pepsin, etc. The author thought physicians were guilty often of not following up their cases of diarrhœa, especially in children, leaving them to the care of the mother after the worst was over, and the case becoming chronic often ended in permanent injury to the health.

Glycerine in Hepatic Colic.—Dr. Ferrard concludes a communication to the French Academy as follows: 1. Glycerine administered by the stomach is absorbed in its natural state by the lymphatics, especially by the vessels which lead from the stomach to the hilum of the liver, and to the gall-bladder; it is even found in the suprahepatic veins. 2. It is a powerful cholagogue, and an excellent remedy for hepatic colic. 3. In relatively large dose (20 to 30 grammes), glycerine brings an end to the attack. 4. In small doses (5 to 15 grammes), taken each day in a little alkaline water, it prevents new attacks. 5 Glycerine, without being a lithotriptic, is nevertheless a valuable agent in biliary lithiasis.—*Journal de Médecine, de Paris*, April, 1892.

Hæmatemesis in Cirrhosis.—Professor Ewald (*Berlin. klin. Wochens.*, No. 23, 1892) reports the case of a man of fifty, with cirrhosis of the liver and ascites, who, after aspiration of twelve quarts of fluid, had an attack of hæmatemesis without retching or preceding nausea. A second hemorrhage was followed by collapse and death. The autopsy showed varicose degeneration and dilatation of the veins of the œsophagus, with rupture in two places. The supposition was that, by removing the fluid, pressure upon the lower abdominal vessels was released, and this blood streaming through the veins of the upper part of the body, caused too great a strain upon the already distended and diseased œsophageal vessels.

AMERICAN ORTHOPEDIC ASSOCIATION.

Sixth Annual Meeting, held in New York, September 20, 21, and 22, 1892.

The President's Address.—Dr. Benjamin Lee, of Philadelphia, began his address with a tribute to the memory of the late Dr. Buckminster Brown, of Boston.

The Inflammation of Cartilage.—He then discussed that portion of the Mutter Lectures recently delivered by Dr. E. O. Shakespeare, bearing upon the subject in question. He said that the intercellular matrix of hyaline cartilage is not homogeneous, but distinctly fibrous. In the interspaces are found cartilage-cells. The cell development appears to be indigenous, cell forming within cell, and the disintegrated outer cell-walls being compressed into endothelial cell-plates which line the lymph-cavities. The lymph-spaces communicate with each other, with the lymphatics of the perichondrium, and with those of the medullary spaces in the lines of ossification.

With regard to inflammatory process in this tissue: The superficial cells lose their fat, their nuclei first divide, and then the cell itself, developing daughter cells. If this development of daughter-cells is too rapid to allow of their becoming encapsulated, they begin to feed upon the adjacent matrix, the bundles of fibres are then loosened and separated, until their free extremities may float in the synovia of the joint, and cartilage-cells with their offspring are set free in the cavity. In cases where the proliferation is excessively rapid the matrix is completely devoured and the lymph-spaces fuse together, and masses of embryonal tissue are formed by the young cells.

From these facts Dr. Lee concluded that joint disease may arise from the cartilage without bacillary infection.

Osteitis Deformans, with a Report of Two Cases.—Dr. Henry Ling Taylor, of New York, said that the disease is a chronic inflammation of advanced life, affecting the long bones, spine, cranium, and pelvis, and characterized by pain, hypertrophy, and softening, so that the bones which sustain weight become curved. The disease does not appear to be hereditary, and no connection is traceable between it and syphilis, tuberculosis, gout, or rheumatism. The onset of the disease is insidious and the progress slow. An aching in the affected bones is usually present, but may be absent. The bone gradually becomes thickened, and if a long bone, longer. At the same time it becomes softer, and if required to sustain weight it becomes bowed. As to treatment, nothing has been found to arrest or modify the disease. Two cases were reported in detail.

Lateral Dislocation at the Knee-joint Due to Tubercular Disease or Paralysis, with Especial Reference to Treatment.—Dr. T. H. Myers, of New York, found that the deformities which occurred in these two diseases differed only in degree, and therefore thought a similar origin most probable. The relaxation or destruction of the ligaments was of much more importance, in permitting the subluxations and rotation, than the destruction of bone, and the reflex muscular spasm and shortening of the fascia the factors producing the deformity. The location of the disease did not seem to influence the position of the limb. In paralysis as well as osteitis, flexion of the limb occurred before other deformities. In that position, the internal crucial ligament mainly prevented subluxation backward, and as it was inserted to the inner side of the axis of rotation of the leg, prevented inward more than outward rotation of the tibia. The spine of the tibia prevented rotation only when the ligaments held the bones firmly in apposition. Attention was then called to the obstacles preventing reduction of this deformity and its dangers. The treatment in use for this deformity was reviewed, and the general reliance on crutches deprecated. Dr. Myers recommended, on account of its simplicity, a method he had used successfully for redeeming the troublesome outward dislocation of the tibia. By adhesive straps traction was exerted on the point longitudinally in the direction of deformity, and also diametrically opposite the subluxation by a webbing strap carried behind the head of the tibia and fastened over a sprin thrown across a large window which was cut in th plaster-of-Paris splint used, to allow room for the le bones to be drawn forward and inward. A perineal crutc completed the apparatus.

Adduction Following Fracture of the Neck of th Thigh Bone.—Dr. H. Hodgen, of St. Louis, reporte the case of a woman of twenty-five years, who sustaine a fracture of the neck of the femur from a slight fall She was treated by extension and a double-inclined plane At the end of six months there was half an inch shorten ing, and she could walk with a cane. At the end of tw years the leg began to shorten and the joint to stiffen, an ultimately it became apparently four and a half inche short and the hip anchylosed. Under chloroform the de formity could be reduced and there was motion at th joint. There was no treatment, and the result is no known.

Dr. Hodgen also reported two cases of *peripheral neu ritis* in region of the scapula, in which immediate relie was obtained by the use of an immobilizing scapular brace.

The Classification of Hip-Disease.—Dr. R. W Lovett, of Boston, said that we have no pathological knowledge sufficient to enable us to assert that certain phenomena mean that the bone is affected or that certain others mean the involvement of the synovial membrane, and that on this account a classification of hip-disease based on the pathological condition present is premature, and likely to be of little practical value.

He then went on to say that hip-disease may be divided into four well-marked clinical types, each of which corresponds to a particular type of the pathological process, namely: *a*. The destructive form, where the disease is rapid, severe, and but little influenced by ordinary treatment. Extensive infiltration of the soft parts takes place, and in most instances the disease passes on to a fatal issue. *b*. The painful form, where pain is a prominent symptom and exacerbations are common. *c*. The quiet or painless form, where pain is an unimportant factor or is entirely absent. *d*. The transient or ephemeral form, where the symptoms are mild and the course of the disease is run in a few months.

Report of Three Cases of Unusual Joint-Lesion.—Dr. B. E. McKenzie, of Toronto, reported, first, a spontaneous dislocation of the hip. This was in a woman, twenty-one years of age, who had been suffering for a short time from what appeared to be rheumatism in various joints. Manipulation was made with a view to reduction of dislocation, and the joint immobilized. The result was one-quarter of an inch shortening, no pain, and apparent anchylosis.

The second case was a complete lateral dislocation of the knee in a man, fifty-five years of age, due to a blow. It was easily reduced by traction and manipulation. The reaction was slight and recovery good. The third was a separation of the femoral epiphysis at both hips, during scarlet fever, in a boy, four years old. He had several abscesses in various parts of the body, but no symptoms pointing to the hips until he again began to walk, when the peculiar waddling gait of congenital dislocation was noticed. The limbs could be drawn down and shoved up again for a distance of about an inch and a half.

Plaster-of-Paris in Orthopedics.—Dr. A. J. Steele, of St. Louis, prefers Holstein butter-cloths to crinoline for the making of plaster bandages. This is cut at the bookbinder's, or with a cobbler's knife on a cutting-board. The bandages are rubbed with plaster, and rolled by hand in preference to using any of the various machines. Warm salted water is used for wetting the bandages to hasten the hardening. A shirt, a stocking, a flannel bandage, or sheet-cotton, covers the skin before the bandage is applied. In removing splints a groove is cut with a pocket-knife, and then the finger, or a specially con-

tructed tool, is inserted between the patient and the plint, and upon this one may cut directly down. In removing old and very hard splints a double-bladed saw, haped somewhat like a Hey's saw, is used.

Mention was also made of leather jackets, and other orms of splints made over a plaster cast.

Observations on the Ultimate Deformities of Pott's isease.—Dr. Royal Whitman, of New York, said that he ultimate deformity of Pott's disease varied with the gion involved. When either extremity is involved here is less opportunity for deformity than in the intermediate portion of the spine.

In this middle dorsal region the affection is often bacute, and not recognized in its early stages. The formity is formed by the normal posterior curvature of e spine, and by the attitude of the patient. The sease is aggravated by the movements of the ribs in spiration, and by the movements of the arms.

Dr. Whitman believes that our efforts should be rected to straightening the entire spine, above and low, to limit the kyphosis to the actual extent of the sease. The lordosis must be exaggerated, the shoulders ld back, and forward reaching prevented, and the chin ld up and the head held back. To accomplish this, a odified Taylor brace is used; and a patient wearing ch a brace was presented for examination.

Lateral Curvature.—Dr. Bradford, of Boston, reported that he had within the past year tried the application of permanent plaster-of-Paris jackets in cases of here latent curvatures, exerting a correcting pressure on the plaster jacket, while still soft, from behind forward, and from before backward, by means of a screw rce, extending from a circular steel ring which is placed ound the patient's trunk. The appliance used is similar to that described by Dr. Hoffa.

In the cases mentioned by Dr. Bradford considerable ressure could be borne by the patient without more discomfort than is occasioned by the ordinary plaster jacket. A noticeable improvement in attitude and figure followed. The method was used only in cases where the rvature was markedly resistant, and in growing patients where rigidity was not complete. The jackets were pplied every two weeks. The treatment seemed applicable only to a certain stage of the affection and ould be followed as soon as possible by lighter methods treatment.

Dr. Bradford also described a light form of appliance be used to prevent faulty attitudes in flexible cases of ral curves.

Experiments Demonstrating the Etiology of the arious Deformities of Hip-joint Disease.—Dr. A. M. elps, of New York, defined the three stages of deformities in hip-joint disease, viz., flexion, abduction, and outward rotation in the first, and flexion, adduction, and inward rotation in the second. The reason for these deformities was explained by the change in the action of muscles by the change of leverage by reason of the tion of the limb. After the limb flexed beyond twenty- and forty degrees from a horizontal plane, the glutei uscles largely became inward rotators. The outward tators became abductors, with the exception of the adratus femoris and external abductor.

The first stage is produced by the voluntary effort on part of the patient to relieve the pressure of the ligament and capsule of the joint; hence abduction, outward rotation, and flexion. Spasm of muscles a voluntary effort exaggerates the deformity of the , constituting the deformity of the second stage. w, when the flexion takes place beyond thirty degrees, often with a lesser degree of flexion, the adductors, ei and tensor vaginæ femoris rotate, and the flexion ses the deformity of the third stage, viz., adduction, tion, and inward rotation. The erratic deformities are ounted for by the destruction of bone changing or deying leverage, burrowing of pus, dislocation, perfoon of the acetabulum, and locking of the head in the pelvis, possibly location of lesion, adhesions, and irritation of special nerve plates supplying the joint. The fluid hypothesis taught by Sayre is erroneous, because many cases are unattended with fluid effusion, and many cases of all the deformities seen in hip-joint disease are extra-capsular disease. Still the deformities are seen in such cases. Other causes of minor importance were also given.

Some Remarks on the Etiology of Club foot.—Dr. Samuel Ketch, of New York, discussed the following theories: 1, Pathological changes affecting the child in utero; 2, heredity; 3, mechanical forces acting on the fœtus; 4, arrested or obstructed development; 5, non-, or retarded rotation.

Of 617 cases of club-foot observed at the New York Orthopedic Dispensary, 196 were congenital. Of these, 126 were males, 70 females; 87 occurred in both feet, 57 in the right foot, 49 in the left foot, 3 not recorded; 151 presented equino-varus, 3 equino-valgus, 14 pure varus, 2 pure valgus, 4 pure equinus, 16 calcaneus, 3 showed different forms in both feet, 3 variety not recorded.

At What Age Should the First Treatment of Congenital Club-foot be Instituted?—Dr. H. Augustus Wilson, of Philadelphia, believed that to a very large extent the changes in the structures of the bones often described is due in a large measure to postponement of appropriate treatment. This may be accounted for in either of two ways. First, that observed in uncorrected cases, where the process of ossification progresses and the partially dislocated tarsal bones become permanently deformed to suit the abnormal position of the foot; and secondly, in the cases of more or less marked severity where recourse has been had to mechanical force to stretch shortened tendons. The bones in these cases, whether deformed or not, yield to the pressure exerted and thereby become deformed and ossified in their altered shape. In most instances either of these occurrences could and should have been avoided by the early recourse to operative procedures. It is not a question of saving of time but of perfect correction. The following were his conclusions:

1. Full perfect correction should be obtained during the first month.

2. Where correction is possible without recourse to rigid restraining apparatus tenotomy should be avoided.

3. Tenotomy, syndesmotomy, or cutting of the fascia, should always be resorted to in the first month when perfect correction cannot otherwise be obtained without undue force.

4. Tenotomy should never be resorted to in infancy without being followed by developmental and restraining treatment.

5. It is misapplied mechanics to force club-feet into rigid restraining shoes, and that doing so in the first three months of infancy will produce bone deformity.

6. All apparatus employed in infancy should facilitate free motion in the proper direction and encourage the development of correlation of muscular force.

7. All methods which employ undue force in correcting or restraining club-feet should be refrained from until the child has reached the age when the bones are completely ossified. The same period should be awaited before resorting to operations upon the bones.

Manual Replacement in the Treatment of Club-foot.—Dr. Ap Morgan Vance, of Louisville, made a strong plea for forcible manual correction of the deformity of club-foot, as safer and handier than the use of instruments to accomplish the same end; and pointed out that the foot of a child would withstand an extraordinary amount of injury without ill results.

The Treatment of Club-foot by Continuous Leverage.—Dr. H. L. Taylor, of New York, referred to his paper in the Medical Record, March 8, 1890, quoting therefrom. He believed that in all cases under eight years of age, and in many older ones, the deformity may

be corrected by continuous leverage within a few weeks; then a retentive apparatus is applied, and worn for from one to several years. The correction is accomplished by simple apparatus worn continuously day and night. The anterior part of the foot is first attacked, then the posterior part, and finally the tendo-achillis. This latter is sometimes cut.

A Contribution to the Anatomy of Congenital Club-Foot.—Dr. H. L. Burrell, of Boston, presented through Dr. Lovett specimens illustrating the anatomy of club-foot in a child born at seven months, and which lived three or four hours.

As compared with the normal foot, the skin over the posterior inner border was more adherent; the size of the bellies of the muscles was normal; the sheaths of the tendons were normal; the plantar fascia was not markedly contracted, but became tense when the foot was brought to a corrected position; the astragalus was small, its neck short, the axis curved with the concavity inward, the anterior articulating surface small, the tibial articulating surface divided into two instead of three facets, and that facet articulating with the fibula was covered with connective tissue instead of glistening cartilage. The plane of the superior articulating surface was oblique and faced inwards and upwards, and the depth of the bone was greater on the outer than on the inner side; the whole bone was small.

The Treatment of Resistant Club-Foot.—Dr. E. H. Bradford, of Boston, said that in the treatment of the most persistent cases of club foot the choice is between such methods as involve the least mutilation and give the best results in the speediest time. Of these three are considered:

1. Forcible correction, preceded by thorough division of ligaments and tendons.

2. Removal of the astragalus.

3. Osteotomy of the neck of the os calcis and of the astragalus, preceded by careful division of the soft parts of the inner side of the foot.

In most cases the first method gives satisfactory results, but in a small percentage of cases relapse takes place. Excision of the astragalus corrects the deformity and gives a useful foot, but one that can hardly be regarded as perfect. In a normal foot a line drawn through the middle of the sole is a straight one, but in cases of club-foot after the removal of the astragalus the median line in front of the medio-tarsal articulation forms an angle with the median line posterior to the articulation. This is apparently due to the obliquity of the anterior facet of the os calcis. In cases where such obliquity exists it is evident that perfect correction cannot be effected either by section of the soft parts on the inner side of the foot, or by excision of the astragalus. In young children where the bones are yet chiefly cartilaginous persistent maintenance of the corrected position during walking will effect a change in the shape of the bone; but in older cases, and especially in adults, this can only be effected by operative measures, namely, by the excision of a wedge-shaped piece of bone just posterior to the line of the cartilage. When the astragalus is completely displaced, so as to prevent a complete correction of the deformity or render restoration to function impossible, it should be excised; but such cases are exceedingly rare.

Means for the Prevention of Relapse in the Treatment of Club Foot.—Dr. B. E. McKenzie, of Toronto, urged the importance of the constant continuance of the corrected position by simple retention brace at night, and the use of a specially made shoe during the daytime. In the construction of the shoe two points demand attention: 1. The last upon which the shoe is made is not the ordinary straight last, but has its anterior half deflected outward, so that when the shoe is made the part which covers the anterior half of the foot is everted. At the same time the upper of the shoe is supported on the inner side, at the part covering the head of the first metatarsal bone, by a strong counter, and on the outer side at the part corresponding to the cuboid bone and the base of the fifth metatarsal. 2. The foundation of the sh is so thickened toward the outer part, and projected o ward beyond the upper as to raise the outer border of foot, and tend to roll it over toward the inner side.

The Weight of the Body in its Relation to the Pathology and Treatment of Club-Foot.—Dr. A. B. Judso of New York, urged that the weight of the patient wa very important factor in exaggerating or correcting deformity of club-foot. He is accustomed, during first year of life, and before the child begins to walk, correct, by simple means, the lateral deformity, and th by holding the foot corrected as to its antero-poster plane, to depend upon the weight of the body to corr the equinus. The braces used by Dr. Judson ha already been described in the Medical Record, and not require further mention.

Osteo-Clasia.—Dr. Nicholas Grattan, F.R.C.S., Cork, Ireland, reported upon the results of 111 cases erated upon since 1887, by means of his screw clam For knock-knee the femur was broken 48, and the le 5 times; for bow-legs the leg was broken 27 times; club-foot 20 legs were fractured and the tarsus crush 9 times. In all the cases the results were excelle The instrument used consists of two curved bars, wh can be approximated or separated as may be desir These bars are connected together by means of a stro pivot, to one end of which is attached a cross-bar to p vent the instrument from overturning when in u Through the other end of the pivot the screw works, one end of which is attached the handle; the other e is fitted into the pressure-bar, which is straight. The part through which pressure is applied to the limb s oval in shape in order to prevent its cutting the skin. A long rod is inserted into one end of the pressure-bar o prevent its rotating when the screw is turned. In fract ing a femur the pressure-bar is applied to the inner si of the limb; in bow-legs it is applied to the outer side f the leg. In knock-knee some form of extension s applied in connection with the fixation splints. In ve severe forms of club-foot the leg is fractured just abo the malleoli, and again higher up; the foot is tu rotated and everted until the sole can be placed up the ground.

Dr. Grattan then demonstrated the working of e osteoclast, fracturing the thigh in knock-knee and the g in bow-legs in several cases, patients of Dr. Gibney at the Hospital for the Ruptured and Crippled.

Contribution to the Treatment of Club-Foot.—The Se retary then read a paper with the above title, presented by Dr. Sigfred Levy, of Copenhagen (which will appear a later issue of the Medical Record).

A Report of Six Cases of Excision of the Knee-Join—Dr. J. E. Moore, of Minneapolis, uses the incisi above the patella. In all cases the patella was remov Drainage-tubes are not recommended. The bones re united by four steel wire nails. The outer dressing of plaster of-Paris extends from the toes to the body, and the dressings are not changed for one month.

Fixation Elbow-Splint.—Dr. T. H. Myers, of New York, presented a splint, and claimed for it the follow ing:

1. It allows dressings to be directly reapplied without moving the joint.

2. The clothing covers the splint almost completely

3. Owing to its body part it affords very good fixati n, especially in the short limbs of young children.

4. Any one can construct it quickly himself, and the total cost is less than one dollar.

5. It can be adapted to fit any deformity.

Officers Elected.—The following officers were elected for the ensuing year: *President*, Dr. A. J. Steele, of St. Louis; *Vice-Presidents*, Dr. Samuel Ketch, of New York, and Dr. A. J. Gillette, of St. Paul; *Secretary*, Dr. Jam Ridlon, of Chicago; *Treasurer*, Dr. A. B. Judson, of New York.

Correspondence.

OUR BERLIN LETTER.

(From Our Special Correspondent.)

CHOLERA IN HAMBURG—HAMBURG'S WATER-SUPPLY—THE CHOLERA CASES IN BERLIN — SYSTEM OF PROPHYLAXIS — RESULTS OF CHOLERA TREATMENT IN HAMBURG — PROFESSOR CANTANI'S METHOD OF CHOLERA TREATMENT —A GOOD WORD FOR BEER-DRINKERS.

BERLIN, September 14, 1892.

WHOEVER knows of the sanitary condition in Hamburg, xpected a terrible epidemic when it first began. Not ven Professor Koch thought that Hamburg's water sup- ly would spread the disease so rapidly. We now have ie authentic number of cases and mortality. Up to Sep- mber 10th, 13,238 cases, and 5,805 deaths are reported. ugust 26th, 991 cases were reported, and 315 deaths; ugust 27th, 1,101 cases, 456 deaths; August 28th, 036 cases, 428 deaths; August 30th, 1,086 cases, 484 eaths. According to the above statistics the mortality veraged forty-four per cent. In former epidemics in erlin the mortality was between sixty to sixty-seven per ent., so that forty-four per cent. shows a relative im- rovement. A great many of the cases belonged to rangers, who did not live here, showing a decided im- rovement in favor of treatment. Hamburg's population eing 610,000, there was 1 case to every 46 inhabitants, hereas in Berlin, in 1837 and 1849, the maximum num- er was 1 in 74 inhabitants. There were in Hamburg in 105 deaths, and in Berlin 1 in 113. The question to how cholera originated in Hamburg has given rise numerous discussions. Koch stated that the large de- ots on the American quay, built for emigrants, and hose sewage empties directly into the Elbe, introducing rms into the water, and then used for drinking pur- oses, were the starting-points. A prominent physician, rector of Hamburg's sanitary affairs, Dr. Reincke, con- adicts this statement, stating that if Koch's theories e right then Hamburg's harbor has been infected before e first genuine case of cholera appeared, and the first rious cases are not as a cause but as a result of the ater pollution.

Dr. Reincke thinks that Hamburg was, before the in- oduction of cholera, like a barrel of powder—it needed it a spark to cause a serious explosion. Such sparks e in the modern transportation of passengers, impossible prevent. No doubt refugees from Hamburg, taken ck at other places, have not caused an epidemic, owing strict isolation and disinfection. Reincke thinks that e spreading of the epidemic depends on the sanitary ndition of a locality at the time of the introduction of e pestilence, depending little or not at all on the dispo- tions of time and place (Pettenkofer). The epidemic August, in Hamburg and the north of Germany, had sagreeable climatic conditions (great heat, little rain, no under-storms). Reincke admits the possibility of the reading of the epidemic to the sanitary conditions ex- ing at present, so it is possible that Hamburg's water- pply, which is poorer than Berlin, Dantzig, and Stettin, a factor.

Hamburg's water-supply dates back to the fourteenth ntury, at which time the legislature ordered an aque- ict system. In the sixteenth and seventeenth centuries rge water-wheels were added, which, however, were de- royed by fire in 1842. In 1843 the Elbe water-supply as built with steam power, supplying only a few dis- cts. Hamburg's street cleaning, fire department, and inking-supply were constructed according to plans by ndley and Mylne, of London, in 1849. The supply mes from Rothenburg, only a little above Hamburg. he water is drawn from the Elbe through a canal e thousand metres long. In large quantities of two ndred thousand cubic metres the water is filtered and en put into cemented canals and transmitted to the ma- chinery. The quantity used three years ago was, on an average, one hundred and fifteen thousand cubic metres. This number shows that, according to a population of more than five hundred thousand, a great many houses are without artificial water-supply, and depend on Elbe water or other sources.

In 1890 Hamburg's Senate recommenced an artificial method of water filtration on the Island of Billwärdär, estimating it for a supply of one hundred and eighty thousand cubic metres of water daily, or for a population of about seven hundred thousand.

In my last letter the hope expressed that Berlin would be exempt from cholera has proven itself, for we have had thus far but eight cases of cholera and seven deaths. Three of these cases were directly from Hamburg, the fourth probably, the fifth positively, in connection with Hamburg ships.

The best system of prophylaxis thus far proven is the following: The quickest possible transportation of the suspects, for the determination of a positive diagnosis, in a hospital suitable for this purpose; the fullest disinfection of everything transported; the prompt isolation, and therefore the sending to the same hospital all persons being in contact with the suspected patients; a detention of from five to eight days; the most complete disinfection of their residences and places with which the patients have been in contact. For the general hygiene the city ordered instructions for disinfection to be distributed broadcast to the public. It was proven absolutely impossible to bring a rational prophylaxis to a million of people in a short time. The laity must be taught the principles of hygiene, and therefore it is urged that hygiene should, in early youth; in other words, it should be introduced (compulsory) in the public schools.

The question of treatment and the best remedies seem to have been the common salt infusion, 1,000 to 1,500 cubic ctm. of physiological table-salt solution under the skin, in the regio infra-clavicularis or under the skin of the abdomen. Salol seems to have been useless. The same may be said of castor-oil, opium, calomel, tannin injections, camphor, and musk. Dr. Rieder (a physician in the cholera wards of the Epindorfer Hospital) made this statement on August 30th, before the Medical Society, thus:

"As we commenced the subcutaneous table salt infusions we noticed, in a few hours in many cases, a successful termination of the clinical picture, and more markedly so on using the same infusions intra-venous. The first case which was (in stadium algidum) ice-cold, cyanotic, somnolent, and pulseless, improved during the infusion, the pulse returned after four hundred cubic ctm. had been injected; the cyanosis of face and extremities, the shrunken condition of the face disappeared—as from a deep sleep the patient awoke, opened the eyes, and spoke, giving his clinical history. We then continued to use the same form of treatment. Many hundred infusions have been used last week, night and day. The median cephalic vein has been used, but when it was abnormally narrow the sephana vein of arm. If after a few hours the pulse again sank, we tried a second and a third injection."

An interesting article on the treatment of cholera, by the Italian clinician, Arnold Cantani, of Naples, appears in the *Berlin Clinical Weekly*, September 12, 1892. According to Cantani, four points are to be considered in the treatment of cholera.

1. The limitation of the growth of the bacilli in the intestines.

2. The destruction of the chemical cholera products in the intestines.

3. Rapid elimination of the absorbed poison from the blood.

4. The rendering fluid of the already thickened blood of cholera patients.

The therapeutic importance of the two first indications are to prevent the development of the disease to its deadly blood-poisoning and blood-thickening (coagulation). The

early fulfilment of these indications demands an abortive treatment of the cholera attack.

No remedy has proven so valuable in the primary stage as intestinal irrigation of tannin; tannic acid does not only kill the cholera bacilli in a short time, but it also destroys the poisonous products produced by the same. At the same time it prolongs, through its astringent properties, the absorption of cholera poison, and also, through the acidity in the intestinal canal, the development of the comma bacilli. The quantity used is: Acid. tannic., 5–20 grams; aqua (38 to 40° C.), 1.5–2 litres; tinct. opii., gtt. xx. to xxx.

The irrigations are to be used every three to four hours or oftener, according to the intensity of the case. In the second stage of cholera, *i.e.*, in stagium algidum with threatening asphyxia, where blood-poisoning has already commenced and blood coagulation threatened, the indication is to eliminate the already absorbed poison from the blood and the removal of the blood-coagulation, as the latter interferes with the heart's action and interferes with capillary circulation in smaller vessels, lessening the vitality of the nervous system by cutting off the supply of oxygen during the blood-poisoning through paralysis and heart-muscle. It is plain that the only remedy for the most serious condition of the cholera patient, *i.e.*, coagulation of blood and poisoning of same, can only be increased by the introduction of large quantities of blood into the veins and tissues.

Cantani's method consists in infusions of hot salt-water in the following manner: To a litre of distilled water, 38–40° C. we add 4.0 grammes natrium chloratum, 3.0 natrium carbonicum. Introduce this into the ilio cæcal region under the skin. In the second stage, besides the subcutaneous infusions, the hot tanno-enteroclyse must be used to prevent new cholera poison from being absorbed. In the third stage of the cholera, in the febrile reaction stage of a severe cholera attack, the therapeutic indications depend on the secondary disease of the different organs. The treatment is therefore symptomatic, besides the effort of elimination of the cholera poison. The introduction of water into the tissues allows the patient to drink plenty of fresh water, naturally; wine, champagne, and coffee, in small quantities.

As long as the stomach can absorb fluids the hypodermic klyse and the enteroklyse must be used secondarily. From the prophylactic vaccination the author anticipates very little benefit, as patients with one attack of cholera are not proof against another in the same epidemic.

A word of comfort for beer-drinkers is the result arrived at by careful investigations of Th. Weyle, in Berlin, that cholera bacilli thrive very poorly in beer. This result Weyle attributes to the acid reaction of the beer. It is, however, important during a cholera epidemic to cleanse the beer-glasses with sterilized, or boiled, or hot water. The examination of different sorts of beer was made by Weyle in his investigations.

Salophen.—Dr. Frolich, who has experimented with this new remedy for rheumatism, found it invariably efficacious so far as relieving pain within a few days was concerned, but, like other salicylic preparations, it does not prevent relapses. He prefers it, however, because it is decomposed in the intestines, and hence does not irritate the stomach; it can be given in large doses and continued a long time, and it is tasteless.

The Measles Bacillus—Drs. Canon and Pielicke (*Berlin. Klin. Wochens.*, No. 16, 1892) think they have discovered the true bacillus of measles, which was constantly present in fourteen cases examined, both in the mouth, nose, and eyes. The size of this micro organism varies greatly, the length of the largest being that of half the diameter of a red blood corpuscle. Bouillon is the only culture medium in which the investigators were able to make the bacilli grow. They are stained with an eosin-methylene blue solution.

Medical Items.

Contagious Diseases—Weekly Statement.—Report cases and deaths from contagious diseases reported to t Sanitary Bureau, Health Department, for the week en ing October 1, 1892.

	Cases.	Death
Typhus fever	0	0
Typhoid fever	57	13
Scarlet fever	39	8
Cerebro-spinal meningitis	4	3
Measles	30	7
Diphtheria	60	19
Small-pox	7	0
Cholera	0	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0

Diaphtherin, a new bactericide, is said to be powe in weak solutions and non-poisonous. It has its espec use in ulcers, burns, and in operations, but is not su able for instruments.

Facial Neuralgia, according to Professor Liebreich, relieved by the following:

℞. Butyl-chloral..... gr. xl. to lxxv.
Alcohol. rect..... f℥ ijss.
Glycerini..... f℥ v.
Aquæ dest.....q. s. ad f℥ iv.
M. Sig.: From two to four teaspoonfuls, p.r.n.

Treatment of Cholera.—The following formulæ, a cording to *Le Progrès Médical*, have been reco mended by a commission appointed to investigate t cholera in Paris: 1. Stimulating drinks are to be giv —tea, coffee, brandy, rum; the body is to be warm covered and hot-water bottles or hot bricks applied the feet. 2. For the diarrhœa, a teaspoonful of the f lowing every fifteen minutes:

℞. Acid lactic..... gm. 10.
Syr. limonis..... gm. 2.
Syr. simp..... gm. 90.
M. and pour into a quart of water.

3. For the vomiting, as well as for diarrhœa, twenty-fi drops of the following as often as either threatens:

℞. Spt. æth. comp.,
Ext. valerian ether.....āā gm. 5.
Tinct. opii..... gm. 1.
Essence menth. pip..... decigm. 0.3.

Pieces of cracked ice may also be swallowed or aërat drinks given.

Castration cannot be expected to give permanent r lief in cases of general neurosis, Brodwitz thinks, becau the ovaries simply share in the central trouble, and t original irritation may be simply increased by the adh sions and thickenings which follow operation. Furth more, melancholy, forgetfulness, and often much more s rious psychic disturbances follow, while the usual sequel molimina, heart irregularities, vertigo, etc., not to speak the loss or diminution of sexual feeling, make the oper tion one to be performed only when absolutely nec sary. Schauta recommends spaying in osteomalac when, after labor, the disease does not improve und the usual methods of treatment, and Mattersdorf recor eleven instances in his "Inaugural Thesis," Breslau, 189 where it was done in atresia of the genitals, with satisfa tory results.

Diphtheria from Rags after Nine Years.—Dr. Rhe has traced six cases of diphtheria to a sack of old ra taken from a house in which malignant diphtheria ha prevailed nine years before, and in which they had r mained undisturbed in the interval.

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Original Articles.

ON THE ORIGIN OF TYPE IN DISEASE.[1]

By EDWARD BENNET BRONSON, M.D.,

NEW YORK.

ENTLEMEN: I have the honor of welcoming you to this xteenth Annual Meeting. Of the pride that one feels ose office it is to preside over the deliberations of this sociation, the pioneer of its kind among the nations d the peer of the worthiest of its successors, you need assurance. The honorable history and achievements the American Dermatological Association in the past e promise of a future still more brilliant, with achieve-nts ever and ever greater.

Dermatology, that is, the study of affections of the taneous surface as distinct from those known as inter-l diseases, boasts of a high antiquity. The striking ap-arance of the skin affections, together with the readiness h which they were observed naturally, made them ob-ts of special interest and of particular study. But, e the study of the stars in early times, it was at first le more than an enumeration of phenomena. The malies were seen and recorded, but in what they con-ted, how and whence they arose, were questions that eived only vague and fantastical answers. The his-y of dermatology furnishes an epitome of the progress medical science through the ages. We have emerged m much of the mysticism of the past, but our gaze is yet clear, and ever new phenomena are crowding upon vision. No one can say we have not progressed, ugh neither the abundance of our literature nor the iety and intricacies of our nomenclature of themselves est this progress. They are often but the dust and oke of the conflict that we know is going on under-th. Though the accumulation of data is important, mere recording of new disease manifestations has but le significance except to the specialist. It is true our d of operation is a vast one. We see more than the dent of internal diseases, and the impulse is natural to what we see, and, what is more, make haste to give it ame. But as in astronomy it is not held the highest ievement to record the discovery of a new nebula, so industry of describing a new kind of pimple or a nge rash is but a slender contribution to medical sci-e. It is the contribution of organized knowledge that itles the specialist to honor; to offer only data and nes is to hide our talent in a napkin.

n their grouping and mutual relations the efflores-ces of a skin disease may be compared to the starry stellations; but in dermatology as in astronomy, the ervation of these visible signs is but preliminary to founder studies and calculations. When we see a eor rash across the sky, the phenomenon does not eal what the thing is except inferentially. When we blood gushing from some point on the surface of the y, our inference is that a solution of continuity has urred. The gushing blood is not the essential fact, yet the appearance of the gaping wound, except as imply a sudden and violent division of tissues nor-ly coherent and intact. I believe that every anomaly uld be capable of reduction to such like simple terms. the term anomaly implies, it is some departure from normal conditions. But what is that departure? A change has taken place. A change of what? We see the result, the accomplished fact; we may describe the lesion with all circumspection; we may give its minutest anatomy, even determine its remotest cause, and yet the question remain unanswered. The study of any phenomena, whether normal or abnormal, only reaches its legitimate conclusion when brought within the purview of scientific knowledge. The anomaly of the flashing light in the sky ceases to be an object of study the moment its meteoric character is recognized and it fits its place in known cosmic law. The study of any morbid effect in the living body is not ended till tracked to its point of departure in the normal, anatomical, and physiological facts.

Strictly speaking, an anomaly in the organism of the body is not necessarily disease, though a disease is always an anomaly. Such anomalous conditions as effect variation in species and higher development are in no sense diseases. It is only when the anomaly impairs or debases life that it can be regarded as a disease. As commonly employed the word disease always suggests the idea of a more or less complicated process. In most cases the anomaly, *per se*, is not immediately apparent. We see a collection of symptoms which are the effects, the obvious signs of a series of reactions, and this series constitutes the process. By tracing this process to its inception we arrive finally at the anomaly, the primary charge or changes that is the essence of the disease.

Every change in the actions of life, whether normal or abnormal, is the resultant of incident and inherent forces. When these forces are all so co-ordinated as to preserve the integrity of the part the result is health, the excess of force going to the promotion of growth and development. It is this ability to appropriate power from external sources that gives life its most distinctive characteristic. When this ability fails, when the inherent power of co-ordination and adaptation is unequal to the external disturbing force the result is disorder, disintegration, disease, or death.

While integration is the normal end and purpose of vital action it by no means follows that disintegration is abnormal and morbid. The one is apparently as essential a factor in life as the other. Vital action is a bipolar movement. At the anode is integration—growth; at the cathode disintegration—decay and death. One would seem to be the necessary complement of the other. The conflict of forces is never-ceasing; the old, the weak, and the unfit are continually falling by the way. There is never equilibrium, never rest. One might fancy an ultimately perfected state of life with an organism so exactly adjusted to external influences as to remain immobile and impassive under the shock of every exterior force—a crystallized living being, motionless and emotionless as a sphinx. But the only living existence of which we are cognizant is in a perpetual struggle, with inevitable defeat at the end. Its greatest gain is that temporary advantage of inherent over exterior forces that enables a unit to repair its losses or produce another unit to take up the struggle and so perpetuate it through an infinite series.

To distinguish between that disintegrating tendency that seems to be necessary, and therefore normal, and that which is abnormal and is known as disease, is not always easy. There are normal processes of involution that closely resemble certain morbid conditions. It is when

[1] An address delivered before the American Dermatological Association, at Pequot, September 13, 1892.

the involution is anomalous that it becomes disease. An alopecia that begins at an earlier period in life than that in which senile changes usually take place is anomalous, and therefore disease. The same is true of those changes in the economy which represent excessive or perverted development rather than impairment. When the exterior forces present themselves in the form of a local cutaneous irritation, as from long-continued friction, the interior forces adapt themselves to the new condition by the formation of a callus. The newly developed energy is expended in formative action. Otherwise the resultant would be disintegration with erosion, or vital derangement with inflammation or ulceration. The callus is a normal kind of auxesis that is compensatory to the excess of incident force. When a similar auxesis, as, for example, in tyloma, is the result purely of deranged interior forces, the local change is disease because anomalous. Is it not probable that in every instance of malformation and new-growth an excessive development of force presented as a local irritation is met by ill-directed or inadequate efforts at compensation? So long as the power of adjustment and adaptation is orderly and normal there is health. When the reverse of this obtains there is disease.

Anomalous action being the starting-point of all disease, how is it possible to unravel all the ensuing complications so as to reach the original anomaly. Disease is like a tangled skein, in which each strand becomes a separate element of disorder acting upon all the others and in turn being reacted upon, is torn apart and reunited, making multitudinous false connections in an infinite complexity. Through all these successive complications to trace our way to the original fault, the first twist in the tangled skein, seems an almost hopeless task. We need an Ariadne's clew to thread this maze of disease with its complex symptoms and pathological changes, a clew that leads to the primary change that is the source and origin of all the disorder.

There is a certain order and consecutiveness in the phenomena of disease that show that all is not confusion and accident. Furthermore, diseases for the most part occur in conformity with certain fixed and ever-recurring types. The typical character depends less upon the nature of the extraneous influences than upon tendencies that are inherent, upon conditions that are predetermined. The morbid unravelling of the normal processes and products of growth is in effect but a reversion of the course of normal development. Blurred and indistinct as is the image, disease is the negative picture of healthy life. Disintegration is always conditioned by the laws of integration. There is method in anarchy; there is law even in chaos.

Essentially, then, disease is not an entity. Its original motive may come from some entity without, but the cause which is most essential and which we would seek is inherent. The Minotaur of our pursuit is not the monster roaming the earth, seeking whom it may devour, but that element of disorder in the organism itself which is a necessary condition of our existence, a heritage of life. Ariadne's clew is Nature's law.

If there be a law of reversion governing disintegration and disease, then those elements of life which are at the summit, those which are the highest, and therefore the latest products of development, would naturally be the first to suffer injury. The disorder should first manifest itself in impairment of the highest function of the part concerned, then, by changes of structure, each successive change affecting structures lower and lower in the scale of development till, finally, the part either relapses into its most primitive or embryonic form or suffers total dissolution and extinction. And in general this accords with experience. There are, however, certain apparent deviations from this law that demand explanation.

In the first place, one of the earliest effects of anomalous action in the organism is often an exaltation of nervous or functional energy, either at the part affected or vicariously at some other point. It is clearly the effe of derangement in the vital forces. War is declared the economy, with accumulation of forces at one poi while there is corresponding depression at another. is a false kind of energy, an excitement that tends rapid exhaustion. In inflammation and fever, where th false energy is most pronounced, the dissipation of for and the tendency to disintegration are most rapid.

Again, apparent deviations from the law of reversion disease are met with which have their origin in certa primary conditions of development. It often happe on the one hand, that where tendencies to disintegrati or degeneration are at work those parts which are t most highly organized do not succumb first, as the sta ment of the law might lead us to expect. It is a we known fact that the more highly differentiated an orga ism or an organ is, the greater its inherent power of sistance to injurious forces or influences from witho In social organizations those regulations, customs, ar and practices of amenity that through long cultivati have become firmly established may continue long af the material prosperity has begun to deteriorate; while a community where similar products of civilization only nascent, have but just begun to develop, these are t first to become extinct, and their disappearance is t very first symptom of a relapse into savagery. So in t functional and organic life of the body we see organs complex structures so highly developed and differe ated from the surrounding parts as to acquire a certa autonomy of action, and when they become involved in morbid process their integrity may be preserved lo after the less favored tissues surrounding them have s fered serious injury. Nevertheless, even in these cas when the process of deterioration once begins in the higher structures there is reason to believe that rev sional law asserts itself and pursues its usual course, p ceeding from above downward.

This course is probably not always, perhaps rarely, a p fectly regular one. The reverse would be the case we the course of development always regular and all of s products absolutely perfect. But throughout the bo mechanism with its various systems, apparatus, orga and tissues, there is an indefinite but surely vast numb of defects and imperfections even in the best organi individuals. They constitute the *loci minoris resistent*. They are the counterpart of those highly organized e ments of the body referred to above, and which we mi term, for the sake of contrast, *loci majoris resistent*. It is the less resistant, the weaker spots of the body, th are the most vulnerable. They play a very import part in disease both at its inception and throughout s subsequent course. They are to a certain degree pe liar to the individual, though in much greater degree the race and to the species. Hence while these morb tendencies of special parts of the organism modify, and a certain extent, interfere with the regular operation f the reversional law of disease, they none the less contribute to uniformity in type, and a knowledge of th would furnish us with a most important clew.

The inherent susceptibility of the tissues is a factor disease to which I believe insufficient attention is giv Especially in this period of elevation of the paras germ as the all-important element in disease is the p played by a defective organism often overlooked. T so long as we feel sure we have established an etiologi identity between lupus and tuberculosis it seems as thou it mattered little what responsibility attaches to the herent defects of the affected part. All the blame cast on the peccant bacillus, while the lurking vice in tissue that invites it to its bed goes without not Every disease rests on a tripod of factors, to wit: Fi The primary injury, representing the incident force; s ond, the susceptibility of the part, which stands for the herent and resisting force; and third, the pathologi effect, which is the resultant. To ignore any one of the factors leaves a very unstable basis for pathological stu

and however true may be the conclusions arrived at, it stops short of the whole truth.

As stated above, susceptibilities to disease having their origin in defects or errors of development, and seldom peculiar to the individual, but occurring in greater or less degree in the same form throughout the entire human family, are largely accountable for the typical characters which most diseases assume. Taking that portion of the organism that more especially interests us, we see over and over again recurring the same morbid reactions. Thus, for example, in the mucous layer of the skin we see constantly recurring those morphological changes that produce the types of disease known as eczema, herpes, and pemphigus. The original perturbing influence may emanate from widely differing sources. It may be an effect of morbid changes at remote parts of the body, or even in the vehicles of transmission, but whatever be its source its interpretation in the skin is restricted to a limited number of reactions. The different sets of reactions of which the skin is susceptible constitute its typical diseases.

The diseases of the skin at present recognized as typical are comparatively few in number. It is not improbable that there are others remaining still unrecognized. Moreover, the recognized ones will doubtless, as time goes on, be found divisible into types more and more restricted. But aside from these there must be a vast number of reactions that are exceptional or peculiar to the individual. When strange phenomena of disease are met with there is a natural inclination to connect them with one or another of the established types, according to real or fancied resemblances. In some cases, doubtless, such phenomena represent new and atypical forms of disease. The atypical character here referred to is that which relates purely to the form of the reaction at the point affected, the morphology of the local lesion. There may be an exaggerated or unusual susceptibility to morbid action, commonly known as idiosyncrasy, but the reactions upon the affected tissue correspond ordinarily to one of the recognized morphological types. The exceptional tendency to urticaria is such an idiosyncrasy, and yet the local lesion or efflorescence is a typical form of reaction, and the particular anomaly that gives rise to it is doubtless identical with that in every case of urticaria. On the other hand, a bullous or a hemorrhagic urticaria represents a divergence from the typical form, or rather a mixture of types. The vesiculation, the hemorrhage, and the wheal, each is typical of its kind and the only difference is in the unusual combination. It is the same in an advanced case of eczema. Though the reaction in the rete is, as I believe, the essentially typical one for that disease, there become conjoined with it in the course of the morbid process other and secondary reactions, producing a complex result with polymorphous characters. But even here there is nothing irregular, not an effect that with full knowledge of the incident and resistant forces could not be predicated.

When among the composite effects of any disease no one can be singled out as essentially the lesion of the disease, the type of reaction remains obscure and the classification of the affection is difficult. Thus, in that interesting series of cutaneous phenomena described first by Mr distinguished colleague under the name dermatitis herpetiformis, the skin affections present a mixed morphological type that is difficult to characterize. The disease in its totality shows distinctly marks of a neuropathic character, and so far as the central reactions are concerned it may conform to some definite pathological type. But its expression upon the skin can scarcely be regarded as a typical dermatonosis. The only feature that appears to be constant in all attacks of the skin is the herpetiform grouping of the efflorescences. But this feature is by no means peculiar to the disease under consideration. It is an effect of a neurotic influence which I see often exhibited, not only in the herpetic diseases strictly so called, but in the exanthems of syphilis, in pemphigus, in lichen, and even in universal eczema. But whereas in each of these diseases we have effects produced in the skin that are fixed and constant, one typical for each one, in dermatitis herpetiformis the cutaneous reactions are for the most part vague and undefined, as it were a nebula of disease that has not yet settled into any regular type or form of morphological change.

The susceptibility to disease is never constant. It is ever shifting with the stage of development or with the age of the individual. The weak points differ at different periods of life, and probably at different periods in the history of the race. It is probable that certain diseases or disease-manifestations that are recognized to-day did not exist in former ages, and conversely, many of those that existed formerly are unknown now, and that not only because of variation in the causes of disease, however important a factor that may be, but largely because the susceptibilities vary at different grades and phases of development. Though the primary cause remains the same, syphilis is a very different disease in the infant from what it is in the adult. It is probably not the same disease now that it was in the fifteenth century. In the young child those features of the disease that are recognized as typical in the adult are obscured by a multitude of incidental reactions which undoubtedly reflect the imperfections and greater susceptibilities of the undeveloped infant organism. In how far a similar explanation would apply to the peculiar manifestations of syphilis described by early writers, it is difficult to say, but it is at least as fair a one as that which would ascribe them to ignorance of the disease or to lack of careful observations.

But notwithstanding there is this tendency to variation in the susceptibilities of the skin to disease, its reactions, conditioned as they are by the laws of tissue evolution and involution, preserve a certain uniformity of type throughout the ages of man and throughout the generations. It is not only that uniformity which the different constitutional diseases exhibit in the sequence of their morbid phenomena, where a central disturbance transmits disorder to many separate divisions of the organism, but that which applies to the anomalous changes or lesions to which these separate divisions are severally subject, and more especially such special and more or less independent divisions as the skin or certain of its component parts. Whatever be the source of disturbance in the skin, whether external or internal, traumatic, septic, parasitic, or neurotic, when it produces disease it does so simply as a perturbing agent, deranging the normal autonomy of the part and overwhelming the inherent power of resistance, that is, the power to convert the deranging force into normal formative action. When the deformative action that is the result has a typical character, it owes it therefore less to the source of the perturbing force from without than to the previous qualities and constitution of the affected part.

But, gentlemen, I am conscious that I have too long delayed the progress of your transactions by these abstract introductory remarks. I now take pleasure in inviting your attention to matters of livelier interest and of more practical concern.

Incompatibilities of Antipyrine.—The following drugs are chemically incompatible with antipyrine, precipitating it from an aqueous solution: 1, Carbolic acid in strong solution; 2, tannin and substances containing it; 3, tincture of iodine; 4, the chlorides of mercury. The following decompose antipyrine when rubbed up with it dry in a mortar: 1, Calomel, which forms a toxic compound with antipyrine; 2, naphthol β; 3, chloral, which with it forms an oleaginous liquid; 4, bicarbonate of sodium; when this is mixed with antipyrine, an odor of acetic ether is given off; 5, salicylate of sodium, which like chloral forms an oleaginous mixture; 6, the salts of quinine and of caffeine, the solubility of which is increased by antipyrine.—*Gazette des Hôpitaux.*

THE USE OF SMOKE AS A CURATIVE AGENT IN PULMONARY TUBERCULOSIS.

By WILLIAM C. ALBERTSON, M.D.,

BELVIDERE, N. J.

In bringing forward another agent in the treatment of pulmonary tuberculosis, I am not unmindful of the already innumerable ones that have arisen, been passed upon by the profession, and dropped completely out of sight and hearing. Nor am I heedless of the fact that the disappointment of the profession, and indeed the whole world, in the failure of Koch's tuberculin, has made further discussion wearisome in the extreme.

Still the subject is so important, the ravages of the disease so widespread and disastrous, that we should never relax our diligence in trying to discover some means for its control.

It was in the month of November, 1889, that I first began to use smoke in this disease.

That the bacillus tuberculosis is the immediate or exciting cause in phthisis seems to be well established. These germs being inhaled into a lung, that either by acquirement or hereditary predisposition has become a favorable soil, set up an inflammation. They become surrounded by an inflammatory exudate, and the tubercle is formed. By pressing on the blood-vessels, the interior of this mass is deprived of nourishment, and in the course of time it breaks down and the cavity is formed.

Now it surely stands to reason that if this be a correct picture of the disease, and that if an agent could be procured that would either destroy or inhibit the growth of the germs, or render the lung in such a condition that the germs would not grow or develop in it, then the disease could be cured. In order to accomplish this it is necessary to find an agent that is harmless to the patient as well as an efficient germicide.

One thing which to my mind largely accounts for the difficulty in doing this, and for the failure of other modes of treatment, is the fact that perhaps the most active and destructive germs are found in the centre of the tubercle, and if anything is to affect them it must penetrate the tubercle to its centre. This is the workshop where the destructive work is done; the laboratory where the deadly poison is manufactured.

This is the object we wish to attain with smoke. The penetrating quality of smoke is a very prominent and useful one. The farmer has utilized its penetrating antiseptic action in preserving his meat for summer use. The mere antiseptic action would not be enough; it must penetrate to the centre of the ham. As a matter of fact, when the meat is properly smoked the centre is reached as well as the outside. It appears to me that this property of penetrability is a most valuable one, in fact the most essential one.

However, it is not enough to demonstrate that smoke is an efficient antiseptic. It must also be harmless to the inflamed and delicate lung. This could only be determined by actual trial. We know that smoke is very irritating to the conjunctival mucous membrane; but whether the mucous membrane of the respiratory tract, that is in a measure used to the passage of dust and other more or less irritating substances over its surface, would be injured by it, was to be determined alone by trying it. After nearly two years and a half of constant trial, I might almost say indiscriminate use, I can state that I have never seen a single instance in which it has been in any way injurious to the lung or bronchial mucous membrane. It does at times irritate the throat of certain persons, but on reaching the lungs it becomes distributed over a much greater area, so that, in my estimation, it is entirely harmless in every respect. What is more, I have never met with a patient whose throat did not become accustomed to the smoke, and who could not take it with impunity after a time of judicious trial. In one case a person was put upon the smoke treatment who had always had a very delicate throat which would become sore and inflamed on very slight provocation. When she first began inhaling the smoke she lost her voice entirely. The smoke was stopped for a few days and then cautiously begun again. This time she experienced very little difficulty, and soon got so that it had no effect on her throat whatever.

Just what the antiseptic action is due to, is a question for the chemist to answer. It may be said that it is only the creasote, and that creasote could be and has been administered alone without the carbon and other substances, either useless or injurious; but I do not think the small quantity of this substance in the little amount of smoke that is used would be at all sufficient, and it appears to me that the good effect must also depend, at least to some extent, on other products of combustion. I think it probable also that the smoke could be decarbonized in some way so as to entirely exclude that element while retaining the other and essential ones. However, the necessity of the creasote has led me to use the sawdust of beech-wood alone in my experiments, as it is from this that the best creasote is procured. The smoke is obtained by the combustion of beech-wood sawdust and I have tried several methods of administration. The only practical ways are by introducing smoke in a compartment in which the patient is placed, or by smoking it in a pipe as men do tobacco. The latter was tried first. The objections to this method are that it is often hard and sometimes impossible, to teach patients, especially ladies, to inhale properly, although by determined effort on the patient's part it can usually be done. The sawdust does not burn very readily, and requires a great deal of puffing, and the effort at this and to inhale it often quite tiresome. Some harmless substance which burns easily could be mixed with the sawdust, and these objections would be partially overcome. By this method also the smoke is more dense in the throat and more apt to irritate it, especially if the sawdust be green, when the smoke becomes much more irritating. The advantages are that it is convenient, can be used at any time, and the cost is nominal, which in itself is a very great item. I usually direct that the common clay-pipe be used, as it is very cheap, and when one becomes old or strong it is thrown away and another used.

This has been the method by which almost all my cases have been treated, as in the country it is next to impossible to get the patients to come to one's office sufficiently often, and the patients also have preferred the pipe. They will often not take the trouble to provide a box or cabinet, and a closet is not always available. I have a cabinet in my office, and am now insisting on my patients coming there, as they are under the direct care of the physician himself, which is always advisable.

The length of time that the smoke should be used varies much in each case. It might be broadly stated from two to six months. Cases vary so much in the course that it is impossible to tell before trial in any individual case.

My experience has been that patients using nothing but smoke begin to see some improvement in about two or three weeks, but this is often slow and hesitating, as they feel better one day and then worse the next. This depends, to a certain extent, upon their mode of living, and the care they take of themselves.

For the first two weeks the cough is usually increased, but generally only during the time of treatment, and then it is almost always accompanied by an increased power to expectorate. The sputum is more easily raised and often more abundant. Generally at the end of this time both cough and expectoration are much diminished and continue to decrease, until in the course of time they cease entirely, or almost so. An increase of bodily weight is a noticeable symptom. This almost always takes place during the first month, and is a valuable indication, as no special tonics or nutrients are given which would naturally increase weight.

The other symptoms disappear as the case improves

The temperature soon falls, but the pulse-rate is at times the last to return to normal, as it may be the first symptom of consequences to make its appearance.

The treatment by smoke need not interfere with the ordinary one. While in my experiments I have not used any medication other than occasional remedies for a troublesome symptom, still, in ordinary cases, it would be of advantage to do so, and the smoke will not interfere in any way.

Any other antiseptic, such as the oil of eucalyptus, could also be used on the sawdust. The heat would volatilize it readily, and it may be that it would be rendered more capable of penetrating the lung tissue.

While I have never used the smoke for any other disease, it might prove valuable in others, especially diphtheria, where it would be the easiest of all remedies to administer, particularly in the case of children. This, however, is merely a suggestion, as I have had no experience in it.

Of course in the case of this agent it is necessary to use the best discretion and judgment as to whom and how much to administer. How often and how long to leave the patient in the smoke can readily be ascertained by personal care in each case, as also the density of the smoke. It may be urged that this is a very loose way of arriving at the dosage of any substance, and that it would be impossible to regulate the dose; but this is a matter of experience, and one can soon find out about what each can stand. I generally begin very cautiously, leaving the patient in the smoke but a few minutes to begin with, and gradually increase the time up to thirty or forty minutes two or three times a day.

The object of this communication is merely to bring the matter before the profession, and not to detail cases, as I wish to make more complete bacteriological researches before doing this.

I may state, however, that it has been tried in twenty-five or thirty cases, and that in all but three very marked improvement has followed, and in nearly half of them cures have taken place, or what the patients have considered cures, and have, therefore, ceased coming. The three were advanced and could not take it well.

A STUDY OF ONE HUNDRED AND THIRTY-ONE CONSECUTIVE CASES OF ENUCLEATION, IN THE PRIVATE AND HOSPITAL PRACTICE OF DR. D. B. ST. JOHN ROOSA.

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SINCE the valuable statistical papers of Nettleship, 1886,[1] D'Oench, 1887,[2] and Andrews, 1888,[3] no paper of great importance upon this subject has appeared. In reporting these one hundred and thirty-one cases, not only are they given in statistical form, but those which deserve special notice are reviewed.

For a better presentation of the cases we have first divided them, in a general way, into two classes—traumatic and non-traumatic; and then afterward taken them both in groups under their several diagnoses—as "enucleation for sympathetic ophthalmia," "enucleation for phthisis bulbi, etc."

Trauma, immediate or remote, occurred in sixty of the cases, or in 45.8 per cent. of all. This corresponds very nearly exactly with D'Oench's[4] report of five hundred cases; he gave forty-five per cent. as due to injury, and remarks if the history of the cases had been more complete, a number diagnosticated "phthisis bulbi," etc., would have been included in the number due to injury. And so we can say in regard to this report, for in thirty-four cases no history of injury or disease is mentioned, simply a diagnosis of "sympathetic inflammation" or "phthisis bulbi" being made. Therefore, if we limit ourselves to the cases where a cause is given, the percentage due to traumatism is much greater, being in fact, 61.8 per cent. Severe trauma, however, demanding enucleation immediately or within a few days after injury, occurred in only fourteen cases, or in about eleven per cent. of the total number. But of these fourteen we shall speak in detail later; here it is only necessary to notice that in a comparatively small number of instances is the injury so extensive as to demand an immediate enucleation; whereas the great majority of cases of traumatism are allowed to remain till they are the source of sympathetic disturbance—many times by cicatricial contraction in the fellow eye. The case of longest quietude after an injury received, in this series, was one where the injury was sustained at the age of ten, from the thrust of a penknife, which did not cause any trouble after once quieting down, which it did in a few days, until thirty-five years later, when the eye was removed on account of sympathetic irritation in the opposite eye. But injured eyes have been known to keep quiet even for a longer period than in the case just mentioned, before causing any sympathetic symptoms in the fellow eye. Four such instances are reported by Adolf Alt in his report[1] of one hundred and ten cases of sympathetic ophthalmia—forty, forty-five, fifty, and sixty years, respectively, being the periods of quietude. This question of sympathetic ophthalmia following trauma, leads us to the presentation of the first group of cases.

I. Sympathetic Ophthalmia as a Cause of Enucleation.—Of the 35 cases so diagnosticated, in 22 a cause is given for the sympathetic ophthalmia, and in 19 out of the 22 cases it was traumatism, or in 86.41 per cent. of all. Thus we see that traumatism plays even a more important part as a primary reason for final enucleation, in this special group of cases, than it did in the whole series, where it was the original cause in sixty-two per cent. of the cases. Alt, in his report of 110 cases of sympathetic ophthalmia, above referred to, after calling attention to the fact that traumatism was the cause in 83½ per cent. of the cases of sympathetic ophthalmia finally demanding enucleation, makes special notice of the 16½ per cent. attributable to idiopathic inflammations. He says: "Among those eyes which were destroyed by idiopathic inflammation, two-thirds presented ulcerations of the cornea, with incarceration of the iris, or the formation of staphyloma. Consequently, the percentage of eyes which were the cause of sympathetic troubles, without presenting cicatrices in the hard membranes, is very small (about five per cent.), and among these should be especially cited those with chalky deposits and ossifications." This shows how rare it is to have a sympathetic inflammation without a perforation of the hard membranes of the exciting eye. In fact, it has been doubted if sympathetic ophthalmia ever occurs without perforating lesion of the exciting eye. In a report[2] of 200 cases of sympathetic ophthalmia by a committee of the Ophthalmological Society of the United Kingdom in 1886 (paper read by Nettleship), all of the exciting eyes except seven, which were doubtful, gave a history of perforating lesion. And the committee thought it "extremely doubtful" if any case of sympathetic ophthalmia occurs without a perforating lesion of the exciting eye. The cases of sympathetic ophthalmia here reported certainly tend to confirm this point, for in the 22 cases where the cause is given, 19 were put down to injury, and of the remaining 3, 2 are credited to violent inflammation in the injured eye, and 1 to old granular lids and pannus. In all of these it is not only possible, but quite probable, that there was a perforation of the cornea. So much for the etiology of sympathetic inflammation which

[1] Transactions of the Ophthalmological Society of the United Kingdom, 1886, vol. vi., pp. 170 et seq. (Cited because of its value as showing the effect of enucleation upon sympathetic ophthalmia.)
[2] Archives of Ophthalmology, New York, 1887, xvi., No. 2, p. 187.
[3] New York Medical Journal, 1888, vol. xlviii., pp. 701 to 706.
[4] Archives of Ophthalmology, No. 2, p. 187, 1887.

[1] Adolf Alt: On the Anatomical Causes and the Nature of Sympathetic Ophthalmia, Archives of Ophthalmology and Otology, Nos. 3 and 4, 1876.
[2] Trans. Oph. Soc. Unit. King., 1886, vol. vi., p. 170. (A report of 200 cases of sympathetic ophthalmia, by a committee of the Oph. Soc. Unit. King.)

required removal of the exciting eye. The history of the 13 cases where no cause for the sympathetic ophthalmia is recorded is very incomplete, and therefore unsatisfactory, as it is also in some of the cases where the cause is stated. Besides stating the fact that there was a sympathetic inflammation, the length of time the patient remained in the house after the operation was performed, and that the patient made a good recovery, little else is stated. Some of the remaining cases, however, are of much interest as illustrative of certain phases of this most troublesome and destructive malady—sympathetic ophthalmia.

Besides the 35 cases of sympathetic ophthalmia, there are 15 cases of sympathetic irritation mentioned in the whole series here reported.

How long an injured eye may remain quiet before causing sympathetic irritation in the fellow eye is illustrated by the following case.

Case. *Phthisis Bulbi, due to the Thrust of a Penknife Thirty-five Years previous to the Removal of the Eye, the Eye keeping Quiet all this Time.—Finally, Sympathetic Irritation.*—September 6, 1884, Robert N——, aged forty-five; lost his right eye when ten years of age, from inflammation following a wound of the eyeball by a penknife.

There is now an atrophied globe, painful at times, and tender on pressure. Cornea is opaque and has a deposit of lead in it. For past six or seven weeks his left eye has felt weak; cannot read as he did without pain, lachrymation, and photophobia. The pupil responds to light. He was first seen at the hospital, some time in July of this year. Then he could read J. No. 1 at 8 inches, w. + $\frac{1}{4}$. Present condition: R. V. = 0. Cornea opaque and globe shrunken. L. V. = $\frac{20}{30}$, J. No. 1 at 8 inches. Photophobia, lachrymation, and weakness. September 8th, right eyeball enucleated. September 15th, ordered an artificial eye. Recovered without delay or accident with a good stump.

The interval between the injury and the sympathetic trouble in this case was thirty-five years. Never can we say, because an injured eye has remained quiet for a number of years, that it will remain quiet and not cause sympathetic inflammation in the fellow eye. It is truly a hidden fire, likely to break out afresh at any day, and we are simply deluding ourselves in the security of a false hope when we act otherwise than to keep the patient under constant observation.

The following cases are of interest on account of bony choroid found to exist after the enucleation, though the real condition of the choroid was suspected before the operation, due to the stony feel of the eyes to be enucleated.

Case I. *Atrophy of Right Globe—Stony Feel to it as if Bony Choroid Existed—Has Worn a Shell over the Shrunken Globe for Twenty-one Years—Sympathetic Inflammation of the Fellow Eye.*—Mrs. W——, aged thirty-five, patient in private practice. Was first seen by Dr. Roosa, June 3, 1890. She lost the sight in the right eye from a wound from a knife. When fourteen years of age, a growth came on same eye, which was removed. Since then, twenty-one years, she has worn an artificial eye over the eyeball. Globe has been a little red, and at times has felt sore. Thinks she does not see so well with the left eye as she did, and has pain at times in it, also some photophobia. Dr. Mathewson examined her in March (present time June), gave her left eye $\frac{1}{36}$ cyl. ax. 90, and advised the removal of the right globe.

Present condition: R. V. = 0. The ball is tender on pressure; stony feel. L. V. = $\frac{20}{40}$. J. No. 1 at 7 inches, with + 1 D. C. + 2 c. ax. 90. No lesion. June 6th, right eye enucleated. Osseous formation of the choroid. Slight reaction after operation, but patient made a good recovery and was discharged on twelfth day. L. V. = $\frac{20}{40}$: $\frac{20}{30}$ w. + 50 c. ax. 105. J. No. 1 = $6\frac{1}{2}$ to 15 inches.

November 3d.—Removed a small granulation from the orbit, which had troubled her some during the summer.

December 11th.—Javal's ophthalmometer = ast. w. 1 1 D. ax. 125. L. V. = $\frac{20}{30}$ w. + 1 cyl. 125. J. No 1 w. + 50 D. C. + 1 cyl. ax. 125. Ordered both glasses

The history of the second case is incomplete. He was a hospital patient.

Case II. *Diagnosis: Atrophy of Left Globe, Sympathetic Inflammation of Right.*—Young man, aged twenty-two When a child left eye became inflamed and atrophy resulted. Three weeks ago the right eye became sympathetic The left eye was removed. Choroid degenerated into small bony mass. Plastic iritis followed in the right eye

The final result of this case is not stated.

These two cases are not only of interest in themselves but the latter adds strength to the point that, when sympathetic ophthalmia is not due to a perforating lesion of opposite eye, some chalky or osseous degeneration of the choroid in the offending eye has taken place, which, acting as a foreign body, may cause sympathetic inflammation.

Two cases of sympathetic irido-cyclitis should be reported here. And though they were not the cause of the enucleations, but perhaps the result of the operation, as in each case the irido-choroiditis attacked sound eyes which had hitherto had no symptoms whatever of any sympathetic trouble; and that, over three weeks after enucleation, the cyclitis in one case appeared twenty two days after the enucleation of a phthisical bulb, the result of a cataract extraction; and the other twenty-one days after the excision of an eye that had been injured by a flying nail. Why a destructive irido-cyclitis should appear three weeks after the above excisions in the fellow eye is hard to tell. That it was due to injury to the optic nerve of the diseased eye by the operation, as some have been led to suggest, we think an open question; for in the case of the excision of the phthisical bulb following cataract extraction, the patient made so quick a recovery as to be discharged on the third day, and in the other case the patient was discharged on the sixth day. But to report the cases.

Case I. *Diagnosis: Phthisis Bulbi following Cataract Extraction—Removal of Phthisical Globe—Patient made a Quick Recovery, but Irido-choroiditis set in in the Fellow Eye Three Weeks Later, and Destroyed it.*—June 7, 1890 Thomas M——, aged sixty-five years. The cause of phthisis in this case of cataract extraction was due to the unruly conduct of the patient, who squeezed the lids violently together the day after the operation, when the eye was being examined, and tore open the wound which had healed, from which the eye was finally lost. On June 7, 1890—two months after cataract was extracted—this atrophied globe was enucleated in the usual manner. The globe was found to be much reduced in size; not much hemorrhage. After treatment, iced cloths. June 10th, no reaction; has had no pain; stump healed. Patient discharged third day after the operation.

July 16, 1890.—Patient returned. Diagnosis: irido-cyclitis, Rt. Two weeks ago pain began to be felt in right eye; became reddened four days ago. Attended out-door clinic yesterday. Was directed to use atropine and hot water every hour. Condition: Some pain, posterior synechiæ, anterior chamber very shallow.

July 17th.—A dissection out of an amount of cicatricial tissue in the stump of the left eye was done on this date, under cocaine. The treatment for next fifteen days consisted in local treatment of right eye with hot water, atropine, leeches, and calomel internally. Eye quieted down and patient was discharged, but returned again in six weeks. While in hospital this time two iridectomies were performed, and as the T. was decidedly +, pilocarpine injections and eserine were used. Eye continued to grow worse, and on November 5th, about four months after cyclitis first appeared, the sight was only pl. On account of suicidal tendencies patient was sent home. At time of writing, 1892, the eye is soft and v = pl. (?)

The second case of irido-cyclitis was that in the eye of a boy, aged seventeen, who first came to the Manhattan Hospital on August 5, 1890, suffering from an

njury to the left eye from a flying nail, which caused a traumatic cataract. This cataract was removed, and afterward an iridectomy performed, but the eye remained painful, and was finally (November 20th) enucleated, a little over three months after injury. The patient made a good recovery and was discharged on the sixth day. Stump healed, and V. R. = $\frac{2}{20}$. No sympathetic irritation.

December 20, 1890.—Just one month after the enucleation of the left eye, the patient returned to hospital. Irido-cyclitis, Rt., was diagnosticated. Patient had noticed for a week that he could not see distinctly, and had had pain for five days. Condition: R. V. = $\frac{2}{50}$, conjunctiva red, iris discolored, and complete posterior synechiæ. Tn. —. He was put on atropine, hot water, inunctions of mercurial ointment, and at times had injections of muriate of pilocarpine. Was kept in hospital two months, and finally discharged, with V. R. = $\frac{13}{20}$.

In a few days he was again admitted to the hospital, and old treatment continued, and in addition was given some quinine. After six weeks he was again discharged, much improved. V. R. = $\frac{2}{50}$ w. — 6 D. ⌒ — 1.50, c. ad. 90. At time of writing, June, 1892, the V. has decreased until it is only $\frac{1}{200}$, and patient goes about the streets with difficulty. The plastic irido-choroiditis is slowly destroying his sight.

In the five hundred cases of reported enucleations by Œchen, there were four cases of sympathetic irido-cyclitis, all of which were lost.

In two other cases of sympathetic inflammation produced by traumatism, a poultice was used after the injury in one case, and in the other tea-leaves. How much harm the tea-leaves and poultices did is not stated, but the injurious effects of these "household remedies" are only too well known. How long these popular errors in the treatment of diseases of the eye will remain rooted in the minds of the laity remains yet to be seen. Judging from the past, however, the millennium will be close at hand ere these errors are eradicated by popular education of the masses.

It is to be noticed, also, that in the 35 cases of sympathetic ophthalmia and 12 cases of sympathetic irritation, that in no case has the sympathetic trouble been caused by a panophthalmitis, in the opposite eye. Nor in the eight cases of panophthalmitis which are reported in this paper as making occasion for enucleation, did any sympathetic symptoms occur in the opposite eye. We might be led to believe by these facts that panophthalmitis was a protective against sympathetic ophthalmia, as was commonly believed by the older ophthalmologists and is still concurred in by some, even now. So long ago as 1834, Wardrop[1] noticed that in inflammations of the eyes of horses that the fellow eye usually sympathized and was lost. unless the inflammation in the first eye was converted into a suppurative inflammation, and this was accomplished by putting lime between the lids or puncturing the eye with a nail. When this was done he noticed that the opposite eye was protected [?] and did not take on any sympathetic inflammation. Instead, however, of putting lime between the lids or puncturing the eye with a nail, he resorted to a more humane method, that of "making an incision in the cornea, and discharging through it the lens and vitreous humor." He suggested also that it "might be beneficially adopted in some diseases of the human eye." Green, of St. Louis, in a paper[2] upon the history of the operation of enucleation, 1885, rather favored this procedure of Wardrop's, as will be seen by the following comment he made upon it. "Wardrop's procedure of making a free incision of the cornea and discharging through it the lens and vitreous humor, was in effect a very complete exenteration, at least when supplemented, as it must have been, by general suppuration and destruction of the choroid; its effectiveness in affording relief from sympathetic irritation, and in protecting against the danger of sympathetic inflammation, cannot be doubted." Again, Graefe, the elder, at one time recommended and practised, for a brief period, the production of suppurative irido-choroiditis, by the use of a seton, introduced in the eyeball, as a means of guarding against sympathetic irritation and inflammation. He was probably acting upon Wardrop's views. But his proposed operation found no support in the profession, and he himself soon abandoned it.

In opposition to Green's opinion is that of Alt, in his report of one hundred and ten cases of sympathetic ophthalmia. One of his deductions from his paper bearing directly on this point is "scars in the hard membranes, whenever combined with alterations in other parts of the eye, particularly in the uveal tract, retina, or optic nerve, are capable of calling forth sympathetic affections of the other eye at any time. *Purulent panophthalmitis makes no exception.* Consequently its artificial production as a prophylactic measure against sympathetic affections is reprehensible." We agree entirely with Alt, and as 43½ per cent. of the cases that he reported were of the purulent panophthalmitic type, the conclusion to which he comes is certainly a sound one. Besides, other cases of sympathetic ophthalmia have been reported following purulent inflammations.

This brings us to a brief consideration of the modes of transmission of sympathetic inflammation, and the means of its prevention. That sympathetic ophthalmia is not transmitted from one eye to its fellow by any single route is pretty certain. This is proved by daily experience. For instance, if sympathetic inflammations extended along the optic nerve always, then resection of this nerve ought to prevent sympathetic ophthalmia. But that it does not afford such protection, even when the ciliary nerves are resected at the same time, is shown by Leber's reported case, to begin with, and others since. Not only has sympathetic inflammation followed resection of the optic nerve, but even death.

That the ciliary nerves are not the only way of transmission of sympathetic ophthalmia, is not only proved by the above case of Leber's, but is shown by the fact that where resection of the ciliary nerves alone is done, sympathetic inflammation has followed.

Snellen suggests that it might travel along the lymphatics accompanying the ciliary nerves.

Nettleship[1] thinks that it might be transmitted by the fifth nerve. His opinion for this is based on the fact that in a case of "distinctive sympathetic inflammation" which came under his care, the eyelashes of the sympathizing eye became white, while those of the exciting eye were not altered.

Alt suggests "that the entire nervous apparatus of an eye has the power of transmission; and even the sympathetic system must not be left out of view in this consideration."

Sympathetic ophthalmia may, we think, be transmitted by anyone or by all of these ways combined. The important question arises, how to prevent it? Of all methods of treatment yet devised for its prevention, the best and only efficient one is enucleation of the offending eye. All the substitutes for enucleation have so far proven failures, and of so little value that they are seldom practised. Evisceration, which at one time was proclaimed as a prophylactic against sympathetic inflammation, and was somewhat extensively practised in Germany and England, has proved of less value than enucleation, and in this country, at least, is resorted to but rarely. Optico-ciliary neurectomy is, next to enucleation, the best remedy for sympathetic affections. But none of them compare with excision, and even this fails at times to cure a sympathetic irritation or check sympathetic ophthalmia, especially if it is at all advanced. Moreover, sympathetic ophthalmia sometimes follows enucleation, though no sympathetic symptoms existed at the time of the enucleation. Two

[1] The Morbid Anatomy of the Human Eye. Second Edition, p. xlii London, 1834.
[2] American Journal of Ophthalmology, 1885, ii., p. 51.

[1] Lancet, London, 1883, ii., p. 1091.

such cases are reported in this paper, and Nettleship [1] has reported nine such cases. It is possible that a very thorough examination, made before the enucleations were performed, would have shown that sympathetic inflammation of an insidious variety then existed. At any rate, we may promise a patient that enucleation is almost, although not quite, an absolute prevention of sympathetic inflammation, if it does not exist when the operation is performed.

II. Phthisis Bulbi, as a Reason of Enucleation.—There are twenty-one cases of phthisis bulbi in this group. The history in a number of them is incomplete, but four of five of the cases deserve special notice. In six of the cases sympathetic irritation is mentioned as the immediate cause of removal of the phthisical bulb. In two of the cases poultices had been applied, and in one of these cases, the history of which is not without interest, the phthisis bulbi was the result of the use of a poultice.

Case I. *Phthisis Bulbi, Rt.—Opacity of the Cornea with Anterior Synechiæ. Lt.—Persistent Headaches not Accounted for unless due to Malaria—Insomnia.*—March 26, 1879. Josie W——, aged thirteen, some time ago had some inflammation of the right eye, and a poultice was applied for one hour. Sight of eye destroyed. Lately she had an attack of inflammation in the left eye. R. V. = 0. Ball irritable. L. V. = $\frac{20}{70}$. J. No. 4, with difficulty. Ophthalmoscope shows media clear in left, except a spot on the cornea. The right eye enucleated. The conjunctiva of the orbit had a discharge from it for two months, and more after removal of the eye. Patient was troubled with persistent headaches and wakefulness. The orbit was treated with astringents and she took quinine for headaches. She also had T +, and pain in left eye, for which two iridectomies and four paracenteses were done, and finally a cataract extraction, giving her V. $\frac{20}{20.0}$, w. + $\frac{1}{4}$ $\frac{1}{2}$.

This case certainly well illustrates the destructiveness of poultices. Another feature of the case was the intense headaches, which were never entirely relieved, though sometimes improved. No other cause than the eye trouble, unless it was malaria, could be assigned as the source of the headaches.

The most interesting case under this group, however, is that where atrophy of the globe was caused by an injury in the neighborhood of the eye, but not any injury to the eye itself. As follows :

Case III. *Atrophy of Left Eyeball due to an Injury of the Face Three-quarters of an Inch below the Eye—No Wound of the Eye or Foreign Body Found.*—October 23, 1882. Willie R——, aged nine, five weeks ago received a wound of the face three-quarters of an inch below the left eye, from the explosion of a metal cartridge, but no injury to the eye. Left eyeball atrophied now. V. = 0. No photophobia in left. R. V. = $\frac{20}{20}$. $\frac{1}{\infty}$ = $\frac{1}{\infty}$. Left eye enucleated. Patient made a good recovery.

This is the only case of atrophy of the globe following an injury in the neighborhood of the eye, but not the eye itself, that has yet been recorded. Cases of atrophy of the optic nerve may, as we all know, occur in this way ; and such cases are not rare. If any of the bones of the orbit were fractured, it could not be detected at the time of operation. No foreign body was found in the globe.

As to the original cause for the phthisis bulbi in this group of cases, in every instance but two, when a cause was given, it was traumatism ; and in the two cases not so caused it was due to violent inflammation. But whatever may be the cause of ordinary atrophied eyeballs, they deserve notice chiefly for their apparent unimportance ; for the patient and surgeon alike are prone to let such eyes remain too long not operated upon, from the mere fact of their harmless appearance, until permanent and sometimes fatal injury to the fellow eye has resulted through sympathetic inflammation.

III. Staphyloma Anterior Totalis as a Cause of Enucleation.—It is in this class of cases that contagious inflammatory disease of the eye plays so prominent a pa as the original cause of trouble. Traumatism, which ha hitherto been so important a factor as the primary caus of the necessity for removal of the eye, here takes a sec ond place. There are 17 cases, and in 11 a cause i stated for the disease. In 2 cases only was it injury ophthalmia neonatorum was the cause in 4 cases; gran ular lids in 1 ; gonorrhœal conjunctivitis in 2 ; suppura tive choroiditis in 1 ; kerato-iritis in 1. In all but 2 case the staphylomas were anterior. In the 2 cases of poste rior staphyloma, 1 was due to injury, and the other t suppurative choroiditis ; the former was accompanied b sympathetic irritation, and has the following history :

Case. *Sclero-choroidal Staphyloma Posterior—Larg Floating Bodies in the Vitreous—Posterior Synechiæ—Sightless Eye—Sympathetic Irritation in the Fellow Eye* —October 23, 1878. James L——, aged twenty-sever Three or four years ago a piece of steel flew and hit hi right eye, while drawing a hoop up so as to get it off c a keg. Pain for two or three weeks after. On takin cold and being exposed now, eye becomes irritable, an for the last two months has had pain in it, with some sym pathetic symptoms in the left eye. Reading hurts th left eye. Condition : Right eye has large floating bodie in vitreous ; posterior synechiæ. V = 0. L. V. = $\frac{20}{30}$ with bad light, dark day. Some photophobia.

October 24th, R. E. enucleated. October 29th wound healed. L. E., ciliary irritation gone. V. = $\frac{20}{20}$ $\frac{1}{\infty}$ = $\frac{1}{5}$. Patient discharged.

The other case of staphyloma due to injury happene in the case of an old gentleman who, eight years previou to the enucleation, was struck in the left eye with a piec of iron. Inflammation followed and sight was lost grad ually, after two years. Staphyloma appeared and gradu ally increased. Now has a large anterior staphyloma o cornea and sclera. Eye blind, watery, and painfu R. V. = $\frac{20}{20}$. $\frac{1}{\infty}$ = $\frac{1}{0}$. Left eye enucleated. Mad quick recovery.

The case of enucleation due to staphyloma followin kerato-iritis, was operated upon by Dr. J. B. Emerson Eight years previous to the excision the patient had bee treated for kerato-iritis in hospital, and again six month previous to the operation, but after the last attack o keratitis the eye grew gradually worse, staphyloma corne formed, and he had constant pain. Made good recover after excision of offending eye.

But little is said in the notes of the case of staphyloma depending upon suppurative choroiditis. Except that h made a quick recovery after operation, with no untoward symptoms, little else is stated.

Of the other cases of staphyloma, seven in number depending upon the contagious inflammatory diseases we shall speak of as a whole, rather than singly. It is in regard to the treatment of these cases that we wish spe cially now to speak. For the cases happening as they do, mostly in young subjects—the ophthalmia neonatorum cases, of course, in infants—the enucleation of such eye is a serious operation, mutilating the patient for life. The best treatment for these cases, indeed, is their prevention and, as they depend upon preventable causes, they should—the neonatorum cases especially—be reduced to a minimum.

However, when it comes to an operative procedure in these cases of anterior staphyloma, the question, how much to do, is an important one, and especially in chil dren.

In these cases of very young subjects, where there was a large anterior staphyloma, with lachrymation, photophobia and pain, instead of doing a complete excision at one time a Critchett major excision—that is, a partial excision—was performed. The portion of the stump thus left was al lowed to remain, and over it an artificial eye was worn after the child was old enough. But if it, at any time later, caused any sympathetic trouble in opposite eye, the remainder of the globe was removed. This procedure was followed from the fact, as Critchett has justified his oper

[1] Lancet, London, 1883, ii., p. 1091.

ation, that the orbit and side of face develop better if a portion of the globe is left than if the whole globe is removed. It is not true, however, as is sometimes supposed, that the orbit of an infant closes completely after enucleation of the eyeball. Development goes on as if the eyeball was in place, but it is seldom possible to use an artificial eye early enough to save the lids from a closing that again increases the deformity; if after the incomplete excision any sympathetic trouble should arise, the complete removal can be done afterward.

In the adults a complete removal was practised, to begin with. In no case were there any untoward symptoms following the operation.

IV. Trauma of a Severe Nature, Demanding immediate Enucleation, or within a very Short Time after the Injury occurred, in 14 Cases.—Unfortunately, the history of some of these cases which were operated upon at the hospital is not as complete as we wish them to be. In four of the cases the mere fact that the eye was injured sufficiently to demand an enucleation, and that they were traumatic cataracts, is about all that is stated. In two other cases of traumatic cataract, one was in a few days followed by purulent inflammation in the injured eye, and for that reason was excised, with a good result; the other caused sympathetic inflammation in opposite eye, and was removed, partly on that account. No final result of this case is stated. Three of the eyes were removed on account of injuries in the ciliary region, and in one of these cases sympathetic irritation was present. The first of the three cases was due to an injury from a piece of iron, causing a wound of cornea, extending into the ciliary region. Prolapse of iris with cataractous lens, field imperfect, eye soft and irritable. The second case of wound in ciliary region was produced by a blow from a spoon. The wound extended from the lower, outer one-third of the cornea into the ciliary region; sympathetic irritation. Patient made a good recovery, with disappearance of sympathetic symptoms in fellow-eye. The third case was due to an injury from a bird-shot. Eye was very painful and irritable, V. = 0.

The globe was the seat of injury in the remaining five cases. In two of the cases the rupture was partial, but called for enucleation in a few days. All three made good recoveries. Complete rupture and partial destruction occurred in the remaining three cases, two of which call for special notice. The first of these cases is remarkable for the quick subsidence of reaction, considering the gravity of the traumatism. It is as follows:

Case I. *Rupture of Left Globe from Bullet—Eye Removed on Second Day after Injury—Remarkable Quick Recovery Considering the Gravity of the Injury—Bullet still in Antrum of Superior Maxillary.*—April 27, 1891. August ——, aged forty-four. At 7.30 o'clock P.M., April 26th, the patient received a pistol-shot, the ball taking effect in the left eye, which instantly destroyed the vision of the eye. Condition: On the left upper lid are powder burns. The ball entered the eye at the middle of the lower border of the superior tarsal cartilage, passing downward and slightly outward through the cornea, lens, and vitreous, making an exit through the sclera, between the optic disk and macula, piercing the outer inferior bones of the orbit. Operation. Patient etherized, and face and appendages thoroughly washed with a solution of hot bichloride (1 to 5,000). A spring speculum was then introduced, and the eye enucleated in the ordinary way, but with more trouble than is incident to an ordinary operation. Owing to the lacerated condition of the globe it became necessary to pass a suture through it. There was considerable hemorrhage. After the eye was lifted from the socket, the course of the bullet could be felt where it had entered the bone. It led into the antrum of the superior maxillary. A V-shaped piece was removed from the upper lid, where the bullet had pierced, and edges of wound brought together with sutures. The lids were dusted with iodoform, a sponge pressed firmly over the edges of the wound, and a bandage applied, to be removed the following day, and iced cloths substituted. On the following day there was considerable reaction and some discharge, but nothing alarming. Orbit was kept clean with bichloride solution (1 to 5,000), and iced cloths applied, and at times had an opium wash. On the third day after the operation the œdema and swelling began to subside rapidly, and discharge to lessen. On the fifth day after the operation the following note was made: Patient doing exceedingly well, less œdema and less discharge. Stitches removed from lid this P.M. From this on the patient improved rapidly—the orbit kept clean with bichloride wash (1 to 5,000), lead and opium wash at times, and on sixteenth day patient was discharged.

At present writing the patient is perfectly well, the bullet never giving him any trouble. This case was operated upon by Dr. Frank N. Lewis in Dr. Roosa's absence in Europe.

The other case of severe traumatism in this connection was the result of a "Fourth-of-July" celebration.

Case II. *Rupture of Left Globe, with Lacerated Wound of Left Upper Lid—But Slight Reaction.*—July 5, 1891. Robert R——, aged twenty. On the Fourth he had the handle of a sky-rocket to hit him upon the left eye. Besides carrying away one-third of the upper lid, it tore the eyeball into shreds. Condition: Middle third of left upper lid gone; left eyeball torn into shreds; considerable reaction, but no discharge. Operation: Orbit and lids washed with bichloride solution (1 to 5,000). The remains of the eyeball removed. Edges of wound of upper lid freshened and smoothed, and brought together with sutures. Iodoform dressing.

July 6.—Dressing removed. Swelling less, and but little discharge. Open treatment of orbit afterward with bichloride solution (1 to 5,000). Wound in upper lid healed by first intention. Patient made a rapid recovery, and was discharged July 15th, nine days after operation.

This last case was operated upon by myself. The plan of open treatment with frequent washing with antiseptic solutions, practised in the last two cases, materially hastened the recovery in each, and lessened the danger to septic infection—a procedure which should be followed in all such cases, and in purulent cases without exception.

V. Panophthalmitis as a Cause of Enucleation.—There were eight cases enucleated, because of a purulent panophthalmitis. In three of the cases no cause is given for the presence of the panophthalmitis, the mere fact that it was present and that the patients made good recoveries is all that was found upon the record books. The five other cases in this group have more or less complete histories.

Case I. *Panophthalmitis Following a Blow from a Whip—Operated upon in the Active Stage of Panophthalmitis—Quick Recovery.*—Two days previous to the operation in this case, the patient was hit in the left eye with a whip. Panophthalmitis followed. Two days after injury patient came to Manhattan Eye and Ear Hospital, and the eye was removed by Dr. J. B. Emerson, in the active stage of panophthalmitis. He made a good recovery and was discharged on the eleventh day.

Case II. *Panophthalmitis Due to Rupture of the Cornea—A Foreign Body Supposed to be in the Fundus—Eye Removed in the Active Stage of Inflammation.*—William H——, aged twenty-four. Three days ago was struck on the right eye by a piece of steel, cutting the cornea all the way across. Enucleation was advised on the first day of the injury, as the eye was sightless and a piece of steel was supposed to be lodged in the fundus. Purulent panophthalmitis set in, and the eye was removed on the third day after injury. Patient made a good recovery.

Case III. *Panophthalmitis Following Traumatism of the Cornea, Iris, and Lens—Removal of the Eye in the Active Stage of Inflammation—No Untoward Symptoms in Healing.*—A piece of steel entered the anterior chamber of right eye three days ago. The piece of steel was

removed the same day with some difficulty. During the operation, however, the iris was injured also, with a loss of some of the lens matter and a little vitreous. On the following day the cornea was hazy, and the day following that the cornea became necrotic. On the third day after sustaining the injury the eye was removed. After-treatment consisted in iced cloths and cleansing. Seven days later an artificial eye was inserted.

Case IV. *Panophthalmitis Accompanied by a Growth of Thick, Yellow Œdematous Tissue, which Covered the Eyeball Completely—A Case where Poultices were Used by the Patient.*—Josie D——, aged twenty-eight. Patient was struck on left eye by a rope three years ago. Recovered from this (?). Three months ago caught cold in the eye. Poultice was applied, inflammation followed, and a growth of thick, yellow, œdematous tissue formed, which covered the eye completely, and even separated the lids. The eyeball and growth were removed. No microscopic examination. Made a good recovery.

Case V. *Panophthalmitis — Wound of Cornea and Sclera—A Foreign Body Suspected to be Lodged in the Fundus—Operation in the Active Stage of Inflammation.*—April 20, 1888. William E——, aged fifteen. Six days ago, while using a rifle, the hammer being in a bad condition, the cap exploded and was supposed to enter the right eye. Atropine has been used since the injury. Condition: R. V. = perception of light. Wound in lower part of cornea and scleral region; iris turbid and conjunctiva injected. To-day, the right eye was enucleated; a foreign body was found in the ciliary region.

All of the above cases except one were operated upon in the active stage of panophthalmitis, and in none were there any unfavorable symptoms following. In each case where a cause for the panophthalmitis was stated it was traumatic in origin. Of course, eight cases do not within themselves show a great deal, but added to the large number of the same kind already reported, they are additional evidence to the fact that enucleation does not tend to produce meningitis, even when the operation is done in the active stage of the panophthalmitis. These with the 161 cases of a like character reported by Noyes, the 12 cases of Andrews, the 38 cases of D'Oench, the 70 of Rolland, and many others without fatality, show that the operation is perfectly justifiable. Besides, in all of the reported cases of fatality after enucleations, for whatsoever cause, only one-half of them were those following the removal of eyes in the active stage of panophthalmitis. To be sure, there is a great disproportion in the number of eyes enucleated in the active stage of panophthalmitis and those removed for all other causes; nevertheless, the reports of the fatal results go to show that fatal meningitis can and does follow in other cases than those operated upon in the active stage of panophthalmitis. This throws a great doubt upon the belief that it is more dangerous to remove an eye affected with panophthalmitis than any other. If all of the cases operated upon in the active stage of panophthalmitis had been treated by the open method, that is, by not bandaging the orbit, but of leaving it open and washing it frequently with aseptic and antiseptic solutions, still fewer fatal terminations would probably have followed such operations. The after-treatment is the important feature in these cases.

We believe the position held by most American surgeons to-day is, to avoid enucleation if possible during the active stage of panophthalmitis, but if there is any urgent reason for an operation, not to hesitate in performing it.

In the case of meningitis following panophthalmitis, it has been, and is still, a question of great interest how the septic infection reaches the brain? But this we prefer to discuss under the head of meningitis rather than here.

VI. Irido-choroiditis as a Cause of Enucleation.—There are nine such cases here reported. Cases I., II., and III. have incomplete histories. All three, however, made good recoveries, as an artificial eye was ordered in each case a few days after the operation, showing that the stumps healed quickly.

Case IV. *Irido-choroiditis Terminating in Purulent Inflammation of Choroid and Vitreous—Patient's General Health Bad—This was a Case of Tedious Irido-choroiditis Following a Prolapse of Iris in Wound after Cataract Extraction.*—December 19, 1888. Mrs. E. W——, aged sixty-seven. Sight has been failing in both eyes for about one year, and the last two months has not been able to use the eyes. Rt. affected first. General health not good, has dyspepsia; no pain or redness in either eye. R. V. = perception of light; field good. L. V. = fingers at eight inches. Ophthalmoscope shows cataracts in both.

January 16, 1889, cataract in Rt. extracted in capsule. On first attempt to remove it by pressure, lens caught on iris. Then on use of capsulotome iris bled, but lens was not wounded and escaped easily without loss of vitreous. Round and black pupil; a little blood in anterior chamber. Eye cleansed and double bandage applied. Opened on second day. Iris in the wound.

January 28th —Patient convalesced slowly. February 3d, prolapsed iris cut off on account of pain. March 7th, R. V. = 0. She has had a tedious irido-choroiditis. April 3d, Eye enucleated for purulent irido-choroiditis. On opening the eye after the operation, the choroid and vitreous were found to be in a state of purulent inflammation. The patient made a quick recovery.

During the whole stage of inflammation of the right eye there was no sympathetic inflammation or even irritation in the left. The patient has since been lost sight of.

Case V. *Purulent Irido-choroiditis Following in Few Hours a Puncture of the Eyeball by a Sharp-pointed Instrument—T. +—Constant Pain—Operation Performed in the Active Stage of Inflammation.*—April 2, 1889. Mrs. S——, aged thirty-eight. Two days ago was hit upon the right eye by some object, the nature of which to her is unknown, in the hands of a cash-boy in a shop. Condition: Eyeball is injected; pupil not observed; iris discolored; no tenderness of the eyeball; feeble perception of light. Leeching and atropine. April 4th, eyeball is hard, iris is now fully distinguished; pupil blocked with cataractous material; considerable pain in the morning; very feeble perception of light; no anterior chamber. April 11th, spot near cornea on outer side of the eyeball somewhat swollen and ulcerated; no perception of light; T. +; pain. April 13th, eye enucleated. Patient made a good recovery and was discharged on May 3d.

This was a remarkable case. A purulent irido-choroiditis set in in a few hours after the injury. The œdema, which was meagre, serves to show that the eyeball was penetrated in the ciliary region by a very fine instrument, and made a wound so small that it was not certainly detected twenty-four hours later.

Case VI. *Iritis with a Questionable Choroiditis in Right Eye—False Cataract and Closed Pupil in Left Eye—Though Giving no Specific History, she Improved Rapidly under Mixed Treatment, but had a Relapse and Left Eye was Removed.*—This case is of great interest from the fact that a perfectly quiet, though sightless, eye was enucleated to see if it would not have a beneficial effect on the opposite eye, affected with irido-choroiditis which was very irritable.

December 5, 1888. Madame T——, aged thirty-three. For a month has had trouble in right eye. Left eye has a false cataract and a closed pupil. Patient seems to be in good health. No evidence of specific disease. R. V. = $\frac{20}{100}$. L. V. = 0; not sensitive. Although the patient gave no specific history, she was given $\frac{1}{2}$ grain bichloride mercury t.i.d., and potass. iodide in increasing doses, together with the local treatment of hot water and atropine in right; upon which treatment she was kept, except with occasional interruptions of the local treatment, until March 30, 1889, when the vision in the right eye had increased from $\frac{20}{200}$ to $\frac{20}{20}$ — w. + 1.25 D. The eye had quieted down, pupil was dilated, and there

was no pain or redness. Was taking 48 drops of potass. iodide t.i.d, at this time no atropine or hot water. From this time on until June 10th, the vision in Rt. failed, and was at this time only $\frac{1.8}{200}$. The potass. iodide was kept up all the time. June 10th, left eye enucleated. Patient made a quick recovery, but the vision in the fellow-eye did not increase. She was kept on mixed treatment for another six months, and vision at the end of this time was $\frac{20}{200}$. December 1, 1890, eighteen months after enucleation of the left eye, R. V. = $\frac{20}{200}$. No. 4 J. with difficulty. Eye quiet, taking nothing.

Although this patient gave no specific history, we see that the vision was increased from $\frac{20}{200}$ to $\frac{20}{50}$ on the treatment of mercury and potass. iodide; but afterward relapsed to $\frac{1.8}{200}$ under the same treatment. It was deemed best at this time to remove the opposite sightless eye, though it was quiet, and see if that would not arrest the inflammation in the eye with some vision in it. The vision was slightly increased in the right after enucleation of the left, but as mercury and potassium iodide were used for six months after the operation on the left, they may have had some effect on the increase in vision. However, eighteen months after removal of the left eye the right was still quiet, and vision in it $\frac{20}{200}$, though she had taken nothing for a year. It seems that the operation was justifiable, although the probabilities are that such an eye, when not hard or painful, would not cause sympathetic irritation. It was not removed because sympathetic irritation existed, but lest it might occur in a patient not wise enough to seek relief at an early stage.

Case VII. *Irido-choroiditis Following Traumatic Cataract—Sympathetic Irritation of Fellow eye.* — Enucleation of the injured eye resulted in a quick recovery, and in relief from all sympathetic irritation in the opposite eye.

Case VIII. *Irido choroiditis with Recurring Attacks of Pain, Traumatic in Origin—Seven Years' Duration—Piece of Steel Found in the Eye after Enucleation.*— Seven years ago was struck by a piece of steel. Has had recurring attacks of pain. Redness; T. + 1 now. Eye removed, and on cutting globe open, a piece of steel was found in the fundus. Patient made a good recovery, and had artificial eye inserted on ninth day after.

Case IX. *Specific Iritis—Frequent Attacks of Irido-choroiditis– Finally, Small Circumcorneal Staphyloma—Sympathetic Irritation of Fellow-eye— Enucleation about Seven and a Half Years after Patient was First Seen* — A gentleman, thirty-five years of age, was first seen in consultation in the latter part of 1884. He had had specific disease a few months before, which produced great impairment of the general health. Is now fairly well. V., R. E. = $\frac{20}{30}$. L. = $\frac{20}{70}$. No. 1 Jaeger fluently with each eye, the right eye is sound. In the left there are posterior synechiæ with round-like opacities of the capsule of the lens. In 1887 this left eye had gone on from bad to worse, in spite of being under excellent professional care of his physician. The vision of the left eye is reduced to $\frac{1}{50}$, the iris is bulged forward like a miniature dome, there is no anterior chamber, the vitreous is hazy; in three months vision was reduced to a quantitative perception, the right eye now has iritis in a mild form—V. = $\frac{20}{200}$. This eye recovered from this iritis, but there was occasional failure of accommodation; the vision of the right eye became $\frac{20}{50}$ in a few months, and the left eye was quiet. In 1889 he had a hemorrhage from the atrophied iris in left eye; in 1891 a hernia of the iris occurred at the upper corneal margin of the left eye; in 1892 the eye was inflamed for several weeks; when the inflammation had abated he came to Dr. Roosa. Sympathetic irritation in the fellow-eye was then present. The patient's general condition was excellent. On May 23d the eye was removed. He made an excellent recovery, sympathetic irritation entirely disappeared, and twelve days after he sailed for Europe wearing an artificial eye.

Nearly every case of irido choroiditis that calls for enucleation is traumatic in origin, and the eye is removed in most cases, not on account of the offending eye itself, but because it is producing sympathetic irritation in the fellow-eye. In the 110 cases of sympathetic inflammation reported by Alt, 30 were cases of irido-choroiditis; 23 of which were due to traumatism, recent or remote. And so here, in the 6 cases where a cause is given for the irido-choroiditis, 4 were traumatic in origin, the other 2 specific, but 1 of these was accompanied by a perforation of the cornea.

VII. Foreign Bodies in the Fundus of the Eye as a Cause of Enucleation.—Of the eyes removed on account of foreign bodies in them, three of the cases are of special interest.

Case I. *Atrophied and Irritable Eyeball Due to an Injury from a Missile Six Months Previously—A Piece of Lead Weighing Twenty-seven grains was Found in the Fundus after Enucleation, which had not been Suspected by the Attending Physician.*—February 21, 1888. Joe McD——, aged twenty-five. Six months previous to entering the hospital he was struck in the right eye by a missile from a "bean-shooter" (a forked stick with a piece of elastic attached to the forks). Not a great deal of inflammation followed, but the globe atrophied and the vision was lost. On February 21, 1888, he was admitted to the hospital and the right eye enucleated, because it was irritable. The after-treatment consisted in iced cloths applied to the orbit and cleansing. Made a good recovery and was discharged on the twelfth day. On cutting open the eye after its removal, a piece of lead, weighing twenty seven grains, was found near the bottom of the eye.

This case is remarkable for the great size of the foreign body found in the fundus, and that it should have remained so long (six months) without giving more trouble than it did. Small foreign bodies, especially if near the disk and embedded, may remain for a great length of time without giving rise to much trouble; but it is rare indeed for so large a foreign body as the one just reported to remain in an eye for more than a few days, or a few weeks at most, without creating enough disturbance in the injured eye to call for its removal. It was not supposed by the patient or his attending physician that a foreign body was in the eye. The eye was removed at the hospital because the stump was irritable.

Case II. *A Foreign Body in the Eye for Six Months without the Patient Suspecting it—In that Respect it was Similar to Preceding Case—Sympathetic Irritation in the Fellow-eye.*—February 26, 1887, Michael W——, aged forty-seven, while stripping a piece of wire from a case last August (1886), was struck in the face by the end of the wire, which flew up as it was cut off of the case with a hatchet. Did not know or suppose he had injured either eye at the time. However, the left eye soon became inflamed, and though treated, grew worse and the sight was gradually lost. Now, the accommodation of the good eye seems to be affected. February 26th, the left eye was enucleated. On cutting open the eyeball, in its centre was found the piece of wire which had done the mischief six months previously. The after-treatment consisted in iced cloths and cleansing. Artificial eye inserted on the ninth day. V., R. $\frac{20}{15}$. J. No. 1 at 8″ w. + $\frac{1}{18}$.

This patient was an intelligent man, yet he was not aware of the fact that his eye was injured at all when he was struck in the face by the wire; in fact he denied that the eye had been injured.

Case III. *Foreign Body in the Vitreous—Detachment of the Retina and Choroid.*—The patient had a piece of steel to enter the left eye four days previously to entering the hospital. Has had iced cloths and atropine, but the eye grew steadily worse and is very much inflamed now. There is an exudation in the vitreous, with detachment of the choroid and retina. The eye was removed on the fourth day after the injury. Patient made a good recovery, and was discharged on the eleventh day after.

Case IV. *Piece of Steel in the Vitreous, Followed by a Severe Inflammation and Great Pain.*—June 25, 1886, M. C——, aged forty, had an injury of left eye one month previous to entering the hospital. A severe inflammation followed, accompanied by intense pain. Extensive adhesions now. No mention was made of the condition of the other eye. The offending eye was enucleated, and the patient discharged after twelve days' stay in the hospital.

Cases V., VI., and VII. have incomplete histories. Case V. was of one day's duration. A foreign body had entered the eye, and an attempt at removal the day previous had proved futile. Upon cutting open the eyeball after removal, a piece of quarry drill, 17''' long and $\frac{1}{2}$''' wide, was found in the vitreous. In Case VI., after removal of the eye, a piece of steel, 2 mm. long, 1 mm. wide, and $\frac{1}{2}$ mm. thick, was found in the fundus; also a clot of blood in the vitreous. All that is stated in Case VII. is that the eye was removed, a foreign body found in the fundus, and that the patient made a good recovery.

Case VIII. *Foreign Body in Fundus Oculi—Traumatic Cataract—Iritis—Posterior Synechiæ—Yellowish-green Mass in the Vitreous—Sympathetic Irritation of the Fellow Eye.*—A. T——, aged fifteen. On May 25, 1892, the patient was struck in the right eye by a piece of steel from a file on which he was hammering. Vision was affected at once, but not lost entirely; there was a mist before the eye. But little pain followed the accident, and no hemorrhage. A friend thought he could see something on the eye, and tried to rub it off.

May 30th.—He was seen by the House surgeon, Manhattan Eye and Ear Hospital, at which time atropine was ordered for him.

June 7th.—The following condition was found: V. R. $= \frac{20}{40}$. V. L. $= \frac{20}{20}$. R. E. showed a scar toward nasal side of cornea; iris discolored; posterior synechiæ at the point opposite corneal scar; opacity of the lens, extending through it, also at the corresponding place; stringy opacity in the vitreous, and also a greenish-yellow mass floating about at nasal side; not much pain, although there was deep circumcorneal injection and iritis; not much tenderness on pressure; left eye normal.

June 13th.—Left eye slightly watery; some photophobia and pain on use.

June 14th.—Right eye enucleated by Dr. Roosa, assisted by Dr. Lewis. A piece of steel, surrounded by exudation-material, was found in the vitreous, one-sixth inch long, one-thirty-second inch wide; made a quick recovery, an artificial eye being inserted on the seventh day after enucleation.

The yellowish mass seen floating in the vitreous, and the streak of opacity extending through the lens into the vitreous, taken together with the sympathetic irritation in the fellow-eye, were strong indications of a foreign body being in the wounded eye, and for this reason it was removed. All sympathetic symptoms were immediately relieved, and the patient made an excellent recovery. He was not pleased, however, with the result, nor his friends; for, though intelligent people (in the common acceptance of that term), they fully expected the eye to be put back after it was removed. One of his friends, immediately after the operation, when told that the eye was out, exclaimed, "Won't you put it back?" It seems that we are expected to do anything short of raising the dead.

In regard to the toleration of foreign bodies in the fundus of the eye, a few words will not be out of place here. Of late Knapp has emphasized the point that the nearer to the disk the foreign body, the less liable is it to cause trouble. In other words, the farther the foreign body is from the ciliary region, the less liable is it to cause irritation and destruction of the eye. This point admitted, another, which is even of more importance, and which has been, we believe, generally recognized, is that a foreign body, to be tolerated by an eye, must become encapsulated and fixed. And in the reported cases of long quietude of eyes with foreign bodies in them, which have finally demanded an enucleation, the cause eventually for the operation is thought to be due to the fact that the foreign body has worked loose, causing irritation, and thus calling for interference. Again, the character of the foreign body, and condition as to cleanliness of it when it enters the eye, has to be taken into consideration. If the foreign body entering the eye is septic, it is a question but of a short time until it causes serious disturbance. On the other hand, if it be antiseptic, as is the case sometimes with powder-grains or bits of wood blown into the eye, they may remain indefinitely without causing trouble. And as two cases of very long quietude of eyes with pieces of gun-caps lodged in them—one by Webster,[1] the other by D'Oench[2]—have been reported, the question is naturally forced upon us, was not the toleration in these cases due, in part at least, to the aseptic condition of the pieces of cap, which were rendered aseptic by the explosion when blown into the eye? The case reported by Webster was of fifteen years' duration, and that by D'Oench twenty-five years.

Where the patient is so unfortunate as already to have lost one eye, and then have a foreign body lodged in the other, the only course to pursue is, if possible, to encapsulate the foreign body. This is best accomplished by keeping the patient in bed with the eyes bandaged. This has been done with the result of preserving a fairly good eye. However, any eye with a foreign body in it is liable at any time to become inflamed, and destruction of the eye ensue; and this from the fact of the foreign body working loose from its old adhesions. In his clinical lectures, Dr. Roosa, in discussing this subject, is apt to speak of the "danger line" in the eye. He says foreign bodies entering the front of the eye, passing through the cornea, are not apt to excite sympathetic irritation, unless loosened and getting into the iris or ciliary region; while those entering in that region, or just in front or behind it, laterally, whether promptly removed or not, are pretty sure, sooner or later, to produce sympathetic trouble. A suit for malpractice in a Western city brings out this point. The complaint was, that the foreign body was not removed promptly enough, and that, therefore, sympathetic inflammation ensued. In his testimony for the defence, Dr. Roosa gave as his opinion that sympathetic irritation was likely to occur in any case where the foreign body had entered, as in the one in question, in the ciliary region, no matter how skilfully and promptly the foreign body was removed. The subsequent shrinkage of the cicatrix and the consequent pressure upon the ciliary nerves, would ultimately excite this. This has not been always sufficiently kept in view. The reports of successful result from the removal of foreign bodies from the eye have often been too flattering, because the situation, of itself, would finally produce sympathetic trouble. It is better to remove the eye when the foreign body has a dangerous position than to leave it.

VIII. Glaucoma.—Seven eyes were removed as a result of this disease. Chronic glaucoma was present in three of the cases, accompanied by persistent pain in the glaucomatous eye in two instances, and by sympathetic irritation of the fellow eye in the remaining case. Secondary glaucoma with persistent pain in the glaucomatous eye, and at the same time disturbance in vision in the fellow eye, occurred in two cases. Subacute glaucoma appeared once. Absolute glaucoma in one case, with constant pain in the offending eye, completes the list. In the two cases of chronic glaucoma, and the one of absolute, where there was pain only in the glaucomatous eye, the patients were entirely relieved by the operation, and the fellow eye, so far as known, kept free from sympathetic irritation. Also in the case of chronic glaucoma with sympathetic irritation, this irritation was cured, the patient making a good recovery. Vision was o — or shadows in all of the glaucomatous eyes removed.

[1] American Journal of Ophthalmology, 1890, vii., p. 172.
[2] Archives of Ophthalmology, New York, xvi., p. 188. 1887.

In the two cases of secondary glaucoma—one following a wound and the other choroiditis—in both of which cases there was sympathetic inflammation in the opposite eye even after the enucleation, which was refused for some time after its proposal, the vision in the sympathizing eye in both instances diminished, and in one case very markedly. But to give them in detail.

Case I. *Diagnosis, Choroiditis—Opacity of the Lens—Glaucoma Secondary*—August 18, 1880, William C——, aged sixty eight. Four months ago had a severe cold, since then there has been a gradual failure of sight in the left eye. No history of injury. R. V. = $\frac{20}{30}$. J. No. 1 fluently. L. V. = shadows, cornea diffusely hazy, opacities in lens and vitreous, and choroidal charges. Eserine prescribed for left. The patient was soon relieved and was discharged, April 21, 1881. It is now about a year since patient was last seen. Last night patient had severe pain in the left eye, but not much pain now. L. V. = 0, globe hard, no reflex, hemorrhage in anterior chamber. R. V. = $\frac{20}{40}$; $\frac{20}{20}$ w.—$\frac{1}{60}$, shallow cupping of disk, media clear, good field, atrophic ring at the temporal side of the disk. Some anæsthesia of both corneas. April 23d, right eye, condition the same. Advised enucleation of the left eye, but patient refused. Eserine and hot water prescribed.

May 26, 1886 (five years since last observation).—Enucleation of left eye was done some time in 1883. Complains now of watering of the right eye. R. V. = $\frac{20}{200}$; T. +; fundus indistinct; veins full and tortuous. Advised to discontinue the wearing of artificial eye for a while and eserine for right eye.

Case II. *Diagnosis, Secondary Glaucoma Following Traumatism in Left Eye.*—November 17, 1885, W. H. Mc——, aged forty-nine. Thirteen years ago (1868), accidentally noticed that he could not see well with the left eye. Four years previous to this time (1864) he had a severe blow in the left eye with the brass of a guide-pole. It was very painful for a few days, and he was left off duty as a soldier (militia in camp) during these few days; eighteen months ago he began wearing glasses on right eye; there was a blur, but no lachrymation at the time. Present condition, R. V. = $\frac{20}{40}$; $\frac{20}{20}$ — w. + 1.75 D. J. No. 1 at 8″ with + 3.50 D. L. V. = 0; lens opaque; pupil dilated; anterior chamber shallow; globe hard. For two weeks the left eye has been sore and painful, the right eye has some ciliary congestion, lachrymation, and photophobia. Ordered cocaine and hot water for left, and advised enucleation if not relieved shortly. November 21st, left continues hard and painful. November 23d, the left eye enucleated. Patient made quick recovery. April 8, 1890, slight redness of right eye; cannot use J. 1 with his glasses; advised a + 5 D.

If we may assume to draw conclusions from so small a number of cases as the seven just reported, two points seem to be brought out by them. First, that a glaucomatous eye when sightless, constantly painful and irritable, and unyielding to the ordinary methods of treatment, should be enucleated, even though not causing sympathetic irritation; for, as shown by the two cases of chronic and the one of absolute glaucoma here reported, the patient is left without further trouble. Further, even when a sympathetic irritation is present in the opposite eye, by enucleating the offending eye it may be checked, if it has not existed too long. One of the cases of chronic glaucoma here reported is of this order—the sympathetic irritation being entirely relieved by the operation. When the offending eye is allowed to remain until a sympathetic inflammation is well advanced in the fellow-eye, or perhaps a glaucoma, an enucleation rarely checks the inflammation in opposite eye. The two cases of this kind that we have just given in detail went from bad to worse, and when last seen the sight in the remaining eye was failing gradually. The operation may do harm. We all know that it is not rare for an acute glaucoma to be started in a fellow-eye, by an operation (iridectomy) on opposite eye, for same trouble. Webster [1] has reported a case of enucleation of an eye for absolute glaucoma, where an acute glaucoma followed in the fellow-eye within thirty-six hours—the only case, he says, that had come under his observation.

[1] Trans. Amer. Oph. Soc., p. 152. Boston, 1885.

IX. Tumors as a Cause of Enucleation.—Of the four cases taken from the history books, three have incomplete histories, the one having a full history occurring in private practice. Of three cases at the hospital, one was a melano-sarcoma, one an intra-ocular tumor, and one an orbital tumor. All have been lost sight of since leaving the hospital. The case in private practice was a melano-sarcoma, the history of which is as follows:

Case I. *Tumor Within Eyeball—Melano-sarcoma Suspected—Patient very Irritable from Thinking so much about her Eyes—Insomnia.*—March 15, 1880, Mrs. R. C——, aged forty. The patient cannot see well with the left eye, it aches and is tired. The right one gets tired easily also. Does not have good appetite, but feels fairly well. Is rather pale, but well developed; does not sleep well, because she worries about her eyes. The first indication that anything was wrong with her eyes was a "scum" falling over left eye. R. V. = $\frac{20}{30}$; fundus normal. L. V. = objects; anterior chamber small; greenish reflex; T. +; intra-ocular whitish growth. March 16th, left eye enucleated. Made a quick recovery. Microscope showed the tumor to be a melano-sarcoma. It sprang from the choroid.

X. Dislocated Lens as a Cause of Enucleation.—The notes upon the three cases here reported are not complete by any means, but the cases are not without interest.

Case I. *Diagnosis, Dislocated Lens—Irido choroiditis.*—The duration of the dislocation is not stated, nor the condition of the fellow-eye. However, a note of irido-choroiditis in the offending eye is made, and this fact very likely had a deciding influence as to the removal. The patient made a quick recovery.

Case II. *Dislocated Lens—Sympathetic Irritation.*—Ten days previous to the enucleation the dislocated lens was removed in pieces, and with some difficulty. Much vitreous was lost at the time. Iritis followed. As the eye was sightless and causing sympathetic irritation in the opposite eye, and the patient desired the eye removed, enucleation was done. The sympathetic irritation was relieved; patient made a good recovery.

Case III. *Dislocated Lens—Staphyloma Cornea and Myopia.*—The lens in the right eye was dislocated two years ago, and as there is no history of traumatism, it was due, altogether likely, to the pressure behind the lens, pushing it into the deep anterior chamber caused by the staphylomatous cornea. The eye is sightless. Enucleation advised, and done. A shrivelled lens was found in anterior chamber adherent to the cornea.

Unless some urgent reason arises for the immediate removal of an eye with a dislocated lens, an attempt should first be made to extract the lens, as was done in one of the three cases just reported; but failing in this, or if the extraction does not meet the indication for which it was done, enucleation must be resorted to. The difficulty of extracting dislocated lenses is well known to all operators who have had to deal with them. It was to the end of diminishing the embarrassment in such cases that the late C. R. Agnew devised a double-pronged instrument, which he called a bident, with which he transfixed all the coats of the eyeball by puncture and counter-puncture in the ciliary region. He then left the instrument in position while the corneal section was made and lens delivered, thus preventing a further dislocation backward of the lens or escape of vitreous during the operation. Although the lens was sure to be removed by this method, and the eye in some cases preserved with more or less vision for a number of months, or perhaps years, yet the consequent inflammation produced by the bident operation, taken together with the original trouble, as a rule resulted in a sightless, and in some cases a painful, eye, which had to be removed afterward. After being practised for some years in the

Manhattan Eye and Ear Hospital, the operation with the bident has been nearly abandoned.

One operator has suggested and practised in such cases putting the patient on a table, face downward and head projecting over the head of the table, while he lay under the table and performed a flap operation and extracted the lens. He no doubt had gravitation in his favor, but we know of no other surgeon doing likewise.

Any dislocated lens which cannot be kept under constant observation should be removed, for after a time, by acting as a foreign body, it may cause iritis, iridochoroiditis, or glaucoma in the affected eye, or sympathetic inflammation in the fellow-eye. Enucleation is the ultra but certain remedy.

XI. and XII. Suppurative Keratitis and Detachment of the Retina as Causes of Enucleation.—Under the diagnosis of suppurative keratitis we find two cases that called for enucleation.

Case I. *Suppurative Keratitis Preceded by Suppurative Iritis and Cyclitis—Eyeball very much Shrunken now.*—December 4, 1888, Mary M——, aged twelve. Nine months ago had suppurative iritis followed by cyclitis and cataract in the left eye. Was seen about one month after her eye first became sore. Enucleation was advised at that time, but patient refused. The eye is simply a shrunken bulb now. V. = o. R. V. = $\frac{20}{20}$. Left eye enucleated to-day; made a good recovery. On cutting open the eyeball all the intra-ocular tissues were found degenerated.

Case II. *History—Diagnosis, Ulcer of the Cornea with Sympathetic Irritation—Left, Pannus—Phthisis bulbi, Right.*—It is questionable if this case should not have been included in those described under Phthisis bulbi. Mrs. H——, aged twenty-five. On October 2, 1876, had an inflammation (kind not stated) in right eye last April, and sight was lost. Inflammation in left eye appeared yesterday. Was awake all night from pain in left eye, which was never sore or painful until last night. Condition: Left eye, ulcer on lower and outer margin of the cornea; ciliary congestion; pain and lachrymation; V. = $\frac{20}{60}$. Right eye, pannus; phthisis bulbi; eyeball red and irritable. October 4th, ulcer of left cornea extending; eye painful; enucleation of the stump of the right eye advised. Vision of L. E. reduced to $\frac{20}{100}$. R. E. enucleated. October 7th, considerable swelling of lids of right. Left vision = $\frac{20}{15}$. October 12th, L. V. = $\frac{20}{50}$. Wound healed in right and all reaction subsided.

February 16, 1877.—After enucleation of the right eye, the ulcer of left eye healed and vision became good. An entropion operation was done with good result. A few weeks ago, an ulceration of the cornea began again without apparent cause. Patient was sent to the hospital, where she improved, then relapsed, and finally had a succession of corneal abscesses which destroyed the eye.

If the left eye in this instance had not had a recurrence of corneal abscesses without any apparent cause, and that four and one-half months after enucleation of the opposite phthisical eye, we should be disposed to think that the right phthisical bulb had something to do with the sudden attack of ulceration in the left eye in October, 1876. And though the left eye was relieved, for a while at least, by the removal of the right phthisical bulb—an indication that the right eye was the offending eye—yet the subsequent history of the case leaves this point in doubt. For, may not the first ulcer in the left have been produced by the same cause as the second one which destroyed it, and the irritation in the right phthisical eye caused by the ulcer in the left. Furthermore, no history of irritation in the right was recorded after its destruction six months previously, until the first ulcer on the left cornea appeared.

Case III. *Detachment of the Retina—Sympathetic Irritation.*—One such case only, and the simple statement that the eye with the detachment was sightless and causing sympathetic irritation, and that the patient made a good recovery after its removal, with cessation of all sympathetic symptoms in the fellow-eye, completed the history of the case.

The After-treatment.—The after-treatment has varied in the cases here reported in one important particular. In the hospital cases a bandage has not usually been applied, immediately or at all, after operation, but iced cloths have been laid upon the orbit for twenty four or thirty-six hours after the enucleation. Dr. Roosa is of the opinion that this usually is most comfortable to the patient, and that the use of a bandage does not prevent ecchymosis. But in private practice a bandage is always applied when the occurrence of hemorrhage, with no surgeon within easy call, might be a serious matter. In none of these cases has any serious bleeding occurred. It has been the practice in all cases to insert an artificial eye as early a date as possible, usually in a week to ten days. The porcelain eye acts not as a foreign body, but keeps the lids well apart, protects the stump, and is a means of healing it.

As a minor point, it should be stated that it is important that the eyelids be thoroughly opened every day after the operation, lest symblepharon occur. This has been known to happen from neglect in the after-treatment.

Casualties of the Operation.—In only a few of the cases was there an orbital cellulitis, and when this was present it was after traumatism, and was not due to the operation so much as to the original injury. The after treatment of iced cloths and frequent cleansing with antiseptic solutions in such cases resulted in a speedy resolution of the inflammation. The severest case of orbital cellulitis was that following a pistol-shot wound, and the mere fact of the patient having left the hospital on the sixteenth day after the enucleation, is an indication of the efficacy of the treatment pursued.

In no case was there a fatal result, or meningitis, which usually leads to a fatality. That there might have been had the cases, especially the traumatic and purulent ones been bandaged instead of having the open treatment, is apparent from a case reported by Priestly Smith,[1] in 1885, where he removed an eye for panophthalmitis and bandaged the orbit. A meningitis followed which came near proving fatal. He remarked upon the case as follows: "The impression left upon my mind by this case was that the patient nearly lost her life through the absorption of septic matter from the wound, and that if, instead of tightly closing the lids in the usual way, I had from the first kept the wound purified by antiseptic injections, the danger would have been much less."

The exciting cause of meningitis and the route of transmission to the brain of the infectious matter, are points that have elicited much discussion and investigation in the past, and deserve notice here. Two papers of much importance are of comparatively recent date. They embrace the number of published fatal cases of meningitis up to the date of their writing, and their conclusions thereupon. They are, first, Nettleship's,[2] 1880, and second, Andrews's,[3] 1888. Nettleship reported thirty cases of fatal meningitis, and mentioned five others that he had heard of since he had written his paper. As to the causation of meningitis, he makes this observation: "The fact of the eye having been wounded, or otherwise perforated, is of much more importance than the presence of visible pus." In support of this view he cites the fact that, in the 23 cases out of the 30, where an exciting cause is mentioned, that in 18 instances the coat of the eye had been perforated. As to the route of transmission of the infectious matter to the brain he says: "There is but little positive evidence that the inflammation extends along the sheath of the optic nerve." And again, "Owing to the free communications between the veins of the orbit, the face, the pterygo-maxillary fossa and the cavernous sinus, by a reversal of the blood-cur-

[1] Ophthalmic Review, London, 1885, iv., p. 39.
[2] Transactions of the Ophthalmological Society of the United Kingdom, 1886, vol. vi., p. 445.
[3] New York Medical Journal, 1888, vol. xlviii., p. 701.

rent in these, is a probable cause of meningitis." Another case cited by him would seem to infer that it was possible for the inflammation to extend along the fifth and sixth nerves, to wit, "In one case where there was thrombosis of the cavernous, there was pus with micro-organisms about the fifth and sixth nerves, with little or no change in the optic nerves."

That the blood, and not the optic nerve, is the channel by which the infectious matter is carried to the brain, is strongly indicated by the report (Andrews's paper just cited) "of thirteen autopsies upon fatal cases of meningitis following enucleation, in which especial attention was directed to the ascertainment by microscopic examination of the channel by which the infection was conveyed to the cranial cavity. In seven the most careful research failed to discover any evidence of inflammation of the optic nerve, and in the majority of the cases the examination as to the answering this question was negative."

But whatever may be the exciting cause of the panophthalmitis which leads to a fatal meningitis, and by whatever channel the infectious matter may be carried to the brain, we know that death after an enucleation—considering the great number of such operations—is rare; and, furthermore, that the operation is perfectly justifiable.

Artificial Eyes.—The porcelain eye, by its truly wonderful likeness to the human eye in color, size, and conformation, is a mark of the advance in ophthalmological science. If the removal of eyes in olden time was done in a rude way, as by putting lime between the eyelids, or puncturing the ball with a nail, no less primitive in its way was the artificial reproduction of the eye. The first artificial eye consisted simply of a metal shell painted or enamelled over, figuring the sclerotic and iris and leaving the cornea absent. It was not until the seventeenth century that a Dutchman made an artificial eye of enamel, and combining this with glass, succeeded in representing the cornea. However, the eyes were simple oval shells, like the half of a bird's egg, and could be worn in either orbit, there being no right or left. How different now! Not only have we rights and lefts, but the resemblance to the natural eye is so great that it often takes an expert to detect it. And how completely the public in general can be deceived by it, is illustrated by an incidental case occurring in the practice of the late Dr. Williams, of Cincinnati. A sharp-witted Irishman who had had his eye removed by the doctor, did not wish to let his neighbors know that he was wearing an artificial eye, so when he returned home he told them the old one had been taken out, scraped, and put back. Not only did he deceive his neighbors, but the county papers took it up and made so much noise that the good doctor became indignant and exposed the patient's story. Whereupon the Irishman, when next seeing the doctor, said, "Doctor, you see what a good thing I was making for you, and you went and spoiled it all."

And the belief that an eye can be taken out, scraped, and put back again, is not confined to the grossly ignorant, as shown by one case reported in this paper; hence it may be well to disabuse their minds upon this point before the operation is done.

Artificial eyes should be removed each night, washed, and kept in a dry place, and not in a glass of water, during the night, as is usually done. Two years is about the limit of time of service of an artificial eye, when it becomes rough and has to be renewed. However, Dr. Chisolmn [1] reports one case where a woman, for fear she would not be able to replace the eye if removed, wore it continuously, without once removing it, for fifteen years.

463 Fifth Avenue.

Stammering is said to be a disqualification in candidates for admission to the St. Petersburg Military Medical Academy. Think of having to pronounce "prichudlivoye sudoproizvodstvo" without stammering!

[1] Lancet, London, 1872, ii., p. 44.

Clinical Department.

THE TREATMENT OF CARBUNCLE BY INJECTION OF CARBOLIC ACID.

By ALAN B. MURRAY, M.D.,

COKEDALE, MONT.

In the three cases thus treated, the carbuncles, situated on the posterior surface of the neck, were from two and one-half to four inches in diameter, tense, swollen, and very painful. They appeared first as mere papules, arousing no apprehension until the surrounding tissue assumed that brawny, tense appearance typical of a true carbuncle. The pain was of that pulsating variety that makes one dread each contraction of the heart. The needle of the hypodermic syringe, containing fifteen minims of pure carbolic acid, was thrust deeply into the centre of the inflamed tissue, the direction of the needle being changed three or four times while the fluid was being injected. This operation caused most intense pain for only an instant, the local anæsthetic power of the acid asserting itself almost immediately. Within forty-eight hours after this treatment the severe pain diminished, and soon became so slight that there was appreciation of inconvenience only upon exerting the action of those muscles underlying the carbuncle. The brawny and swollen tissues, before so exquisitely sensitive, became of a more healthy appearance and only slightly tender, the active inflammatory process seeming to centralize or "point."

After the tenth day the course was that of an ordinary furuncle, the carbuncle asserting itself only in the prolonged suppuration and casting off of portions of gangrenous tissue. The advantages of this method of dealing with this exceedingly troublesome affliction is, that the course of the inflammation is much shortened, the pain and general malaise to a great extent done away with, and the patient relieved of that old-time nuisance, the poultice. The relief of the pain alone would certainly be deemed, by one who has suffered with a carbuncle, sufficient excuse for this mode of treatment. The success attending this little operation would seem to warrant its more general application, not only in cases of carbuncle but in the more common furuncle. It would probably be difficult, however, in many cases, to persuade the patient to submit to this procedure on account of the attending pain. This objection may be readily overcome by spraying the carbuncle with ether until local anæsthesia has been produced; then thrusting the hypodermic needle deeply into the tissue through the anæsthetized area. No claim for originality in this treatment is made. It has been advocated at different periods for years. But the general recognition of its efficacy has not been such as one would expect from its real surgical value in such pathological conditions.

The Prognosis of Gunshot Wounds of the Chest.—The mortality following gunshot wounds of the thorax has varied greatly at different times. Thus, from a collection of statistics published by Dr. A. Claus, in the *Bulletin de la Société de Gand*, we learn that at the battle of Toulouse the mortality was eighty three to eighty-seven per cent., according to different observers; in the Crimean war the average of the statistics presented by the Russian, French, and English surgeons was eighty-nine per cent. Loeffler gives a mortality for the Prussian army, in the war with Denmark, of 68.4 per cent., and Stromeyer, for the same army in the Austrian war, sixty-six per cent. In the American civil war the mortality was 62.5 per cent. This reduced mortality-rate is, according to Santi, due to the smaller size of projectiles now used. This writer believes that in the case of wounds of the chest, from a ball of small calibre, which have been antiseptically treated, the mortality should not be greater than fifteen per cent.

MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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TACHYCARDIA.

THE term tachycardia has recently come to be somewhat loosely employed in describing various conditions associated with rapid heart action, and confusion might readily arise from failure to distinguish the essential paroxysmal tachycardia described by Bouveret, from that which is symptomatic. One author has even defined tachycardia as "a disease without demonstrable organic heart-lesion," while, as is well known, it is rather to be looked upon as a symptom in many pathological states of different nature and location, besides the neurosis upon which the essential variety is supposed to depend.

Were exact knowledge always obtainable, the latter form of tachycardia would probably be found much more rarely than instances in which some lesion of an organic nature is present, either within the confines of the heart-walls, or, as in an instance just reported, involving the pericardium, or in some organ more or less intimately connected with the heart. Instances are recorded in which paroxysmal rhythmic disturbances, and great acceleration of the heart-stroke, have followed injuries, such as a fall upon the head; and some such cases seem to be more properly classed as tachycardia than as cardiac epilepsy, while essential tachycardia has a counterpart in the heart derangement occasionally observed in epilepsy itself.

In "Basedow's disease," too, a certain proportion of the sufferers are tachycardiacs, and here, by the way, according to Eloy, the paroxysms are greatly diminished by hydrotherapy.

In cardiac hypertrophy, especially that form which is found associated with chloro-anæmia, paroxysms of tachycardia are prone to occur, and while in the vast majority of heart affections such attacks are not among the prominent symptoms, care must be exercised to separate such symptomatic cases from the essential variety. This, as has been previously intimated, is not always an easy matter, and even after death, without microscopic examination, or even with it, affections of the ganglia of the heart, or the nervi accelerantes, or other changes in the myocardium might pass unnoticed.

Where there are plainly marked endocardial changes, or valvular lesions, a tachycardia can be readily explained as due to reflex irritation. The writer has had a case under observation for a number of years in which a valvular stenosis caused the patient scarcely any other trouble than an occasional severe paroxysm o tachycardia lasting from ten minutes to twelve hours and during which the heart-beats could only be approxi mated at from two to three hundred in the minute. Thi patient can almost always stop the palpitation, after it ha been going on for some time, by allowing the head to hang down over the side of the lounge or bed, until i nearly reaches the floor. The rapid beating will then stop with a sudden and somewhat painful thud, felt in al parts of the body, after which the pulsations become a once perfectly regular at from eighty to a hundred in the minute.

Treatment is without much avail in most tachycardias whether they be due to paralysis of the inhibitory fibre of the pneumogastric, to irritation of the accelerators o the sympathetic, or to reflex action from some lesion i the heart-wall or elsewhere. Morphine is probably th best remedy during the attack, given beneath the skin t insure prompt action. Quinine, ergot, and nux vomic have been well spoken of in the intervals, and digitalis i almost always useful.

Brannan, in an excellent paper read last year at th Academy, says that caffeine, nitro-glycerine, and nitrite o amyl have no effect. He cites the case of Nothnagel' patient, who could retard the paroxysm by holding th breath as long as possible, and that of Wood, who stoppe the attack by drinking fluid as rapidly as she could, an either very cold or as hot as it could be swallowed Poulet has found benefit from a twenty per cent. tinctur of the *coronilla varia*, a plant very common in Alsace, whic resembles digitalis in its action. Fifteen to thirty drop are to be given daily.

Cure of this condition is very exceptional, but Dr Hampeln has just reported an instance of habitual an paroxysmal tachycardia of fifteen years' standing, whic resulted in natural recovery. The case, which is de scribed in the *Deutsche Medic. Wochenschrift*, Septem ber 1, 1892, has an additional interest on etiologica grounds. The patient had been attacked fifteen year before with acute articular rheumatism, and had as a complication severe fibrino-serous pericarditis. The at tacks of tachycardia, with pulse reaching 280 beats, dysp nœa, etc., had then come on, and gradually increased i duration from three-quarters of an hour to eight hours when in April, 1891, after an unusually severe paroxysm the heart suddenly regained its natural beat, and has sinc remained free from any evidence of the former trouble.

The author's explanation is that attachments had bee occasioned by the pericarditis, and that these interfere with the freedom of the heart's action and acted as a constant excitant from the mechanical restraint. In th last severe paroxysm these attachments were supposed t have been torn away, or so stretched that they no longe acted as fetters upon the organ, which once freed fro its restraining and irritating bonds, sank into the quie and regular action of fifteen years before. In few in stances could such a happy termination be hoped for but the record is encouraging as showing that recovery possible, even after many years and in very severe cases as this one undoubtedly was. In essential tachycard the most that can be accomplished is to secure all th freedom from nerve-irritation and fatigue which is pos sible, and with this end in view stimulants and tobacc

will be withheld. Digitalis, in form and dose to meet the requirements of the case, will be the drug from which most benefit will probably be found, and during the attack, on account of gastric intolerance, it may be given hypodermically or, as Huchard has suggested, by the rectum.

VIVISECTION AGAIN.

THERE is a paper called *Our Animal Friends*. It is professedly addressed to the general public, and to the younger and perhaps kindlier portion of that public. Its object is no doubt a good one, and it has our best wishes in its efforts to develop humanity and gentleness toward animals.

When such a paper, however, deliberately publishes flagrant lies about medical men and their work, it deserves the severest reprobation, for it betrays its trust and misuses its position as a promoter of morals. In its issue for July is an article on vivisection of the hysterical character usual to professional antivivisectionists. If it were simply this, however, we might let it pass; but the tone of it is grossly misleading and many statements are untrue. For example it says: "We have before us a list of two hundred and twenty-seven cases of hydrophobia treated by M. Pasteur from September, 1885, to February 4, 1892. Every one of those cases terminated in death. In one of them, the patient, who was himself a physician, went to Paris for treatment, and died of hydrophobia two years and two months afterward. Against this more than double hecatomb of victims of hydrophobia—many of which may well have been victims of the 'inoculations'—M. Pasteur can point to *not one case* of alleged cure by his treatment, in which the virus of rabies had certainly entered the system of the victim. It appears, then, that to this day there is absolutely not one particle of evidence that the unspeakable torture of scores of thousands of inoffensive creatures, put to death by M. Pasteur and his followers, with all the agonies of hydrophobia, has saved one single human life!"

As a matter of fact, between 1886 and 1891, 9,465 persons were treated by Pasteur for rabies and 90 died. A mortality of less than one per cent. Since at a very low estimate the normal mortality would be 946, Pasteur may be credited with saving over 800 lives, instead of losing 297.

Among other extraordinary statements made in the same article are these: "Medical men boast that they are ministers of humanity, and yet a large part of their training is such as to make them remorselessly inhuman." It would be easy to fill hundreds of numbers of *Our Animal Friends* with illustrations of the absolute inutility of thousands of experiments which are continually and wantonly repeated under the false pretence of scientific research."

Our Animal Friends is, we believe, the organ of the Society for the Prevention of Cruelty to Animals, and it estimates that the Society should undertake a systematic propaganda in this State in order to abolish vivisection.

We note that its list of officers contains five or six lawyers and one clergyman, but no physician. We would suggest that it secure the service of some medical man who might temper the rhetoric of its editor with truth and justice. The fact is that the amount of vivisection done in this country is very small. It would be better for humanity if it were more encouraged. No single agent is doing more to banish disease, and with it sin and unhappiness, from mankind.

THE PAIN OF DEATH.

THE question whether death is a pleasant or painless process has been agitated in the columns of the *Sun*, and several very exciting accounts of the sensations of the dying have been reported. The conclusion is reached that death, on the whole, furnishes an agreeable sensation and one not to be dreaded. "A great thing this, Lucilius," says Seneca, "and worthy of long study, namely, that a man quit life with tranquil spirit when that inevitable moment comes." "To fear death," he adds, "is foolish. Death imposes a necessity that is impartial and inevitable. Who can grumble at being subject to a condition from which no one is exempt." Thus the ancient Stoic reasons, until between him and the *Sun* correspondents one might be quite persuaded to look upon death as an agreeable diversion. Unhappily, the assurances of the experienced and the philosophy of the wise are of little aid when the actual exigency confronts us. Medical observation shows that as death approaches one in old age, the sensibilities become benumbed and the process, if not agreeable, is not painful. The natural death of the aged is a physiological phenomenon, and should excite no apprehension as it involves no distress. The onset of death in the younger and healthy persons is viewed with a natural apprehension which can only be modified by temperament and the consolations of religion and philosophy.

The question whether the actual act of dying is painful cannot be answered categorically; for we do not know when a person dies, but only when he loses consciousness. The point discussed in the *Sun* is, therefore, really whether losing consciousness is painful. We believe that the experience of most physicians would affirm that it is. Ordinary syncope, epileptic attacks, the production of anæsthesia, the results of a cerebral concussion are usually not described as agreeable. The sensations of those drowning and asphyxiated, on the other hand, seem to be more often pleasant, at least in the later stages. Certain narcotic poisons can also produce coma agreeably. But, on the whole, man feels best when consciousness is clear and well preserved, and its sudden loss is attended with more pain than pleasure.

A NEW TEST FOR GLANDERS.

THE appearance of glanders in London, and in this city lends special interest to recent bacteriological studies of this disease which have resulted in furnishing a diagnostic test. A year and a half ago, Dr. Kalning, of Dorpat, announced that he had prepared an extract from the bacillus of glanders (b. mallei) which caused a febrile reaction when injected into infected animals. Dr. Kalning unhappily caught glanders and died in the course of his experiments. Dr. Preusse, of Dantzic, Dr. Pearson, of Berlin, and Professor Nocard, of Paris, all working independently, have reached similar results to those of Dr.

Kalming. Preusse's method has been most largely followed and tested (*British Medical Journal*). He used old, dried-up cultures of the bacillus mallei grown on potato; these he steeped for several days in a mixture of water and glycerine (equal parts), at the temperature of the body. The extract he filtered several times, and sterilized in the steam bath. It was finally an imperfectly clear, dark yellow, oily liquid, of neutral or faintly acid reaction; it possessed a characteristic odor. Preusse tried the action of this extract on six horses belonging to certain large stables in which glanders had just previously broken out; none of the six horses, however, showed at the time of his experiments any unequivocal sign of being themselves glandered. All but one showed febrile reaction in five to fifteen hours. The horses were killed in twenty-four hours and all those which had had the fever showed the unmistakable evidence of glanders.

Altogether 64 horses have been tested by Preusse's method. Of these, one animal was obviously at the time of injection glandered, but the remaining 63 showed at that time no definite symptoms of the disease. In 41 of the horses a first injection of mallein was followed in about eight hours, and a second in about four hours, by an elevation of temperature altogether above the limits of the normal. In 23 horses no rise of temperature whatever followed the injection. Every one of these 23 cases proved on *post-mortem* examination to be completely free from anatomical signs of glanders. Of the 41 horses which gave a febrile reaction after injection, 38 were found by *post-mortem* examination to be actually glandered, but in 2 of the 41 the most careful scrutiny failed to reveal any signs at all of a glanderous condition. The test has been used somewhat in London, but not yet with perfect satisfaction. If the disease spreads in this city or neighborhood it is to be hoped that some of the testing extracts will be tried.

THE TREATMENT OF AORTIC ANEURISM.

It is to be hoped that the ingenuity and perseverance shown by surgeons and physicians in their attempts to cure aneurism of the large arteries will be eventually successful. The history of the therapeutics of this trouble is extremely interesting, but also very disappointing. The ancient and heroic methods of ligation illustrated how near a bold surgeon could get to the heart without killing the patient at once; the operations were successful, perhaps, but the patient died. The attempts of surgeons have in late years been directed mostly to some method of producing mechanically coagulation of the sac. At first, the galvanic current was tried, then foreign bodies, as wire or catgut, were introduced. Not long ago Macewen advised the practice of scratching the inner surface of the sac with needles. A combination of the galvanic current and a long wire has been tried several times. In the *American Journal of the Medical Sciences* for October, Dr. D. D. Stewart reviews the results of this mode of treatment and contributes a case of his own, making a total of eight. Of these eight, six died and two were improved or cured. In most of the six fatal cases the operation was not attempted until the patient was in a hopeless condition. Furthermore, Dr. Stewart shows that the technique has usually been imperfect, and his observations lead one to hope that with greater experience and skill we may yet be able to relieve many heretofore hopeless cases. Dr. Stewart advises the use of silver wire in preference to steel, soft iron, or catgut. The wire should be fine and should be drawn just sufficiently hard to be readily passed through the cannula forming spirals in the sac. It is believed that six to ten feet of wire are sufficient. A strong galvanic current of 50 to 70 milliampères should be passed through the aneurism for an hour, the anode being attached to the intra-aneurismal coil.

CHARAKA SAMHITA.

It may be that some readers are weary at times of the medicine of to-day, with its arid science, its disappointing art, and the politics of its prophylaxis. If so we commend them to "Charaka Samhitá," a treatise on Hindu medicine which has recently been put in English by Dr. Abinash Chandra Kaviratna. This treatise comes in parts or lessons, and takes us into new realms of medical thought and new modes of scientific teaching. The right of translation is reserved, but we can give a little idea perhaps of how Lesson III. appears in modern English.

According to the "Samhita," Aragbadhiya, son of Atri revered by Siddhas and great Rishis, has described for the benefit of the world two and thirty kinds of powders and plasters that destroy divers diseases. The son of Atri has also gone briefly—yet not too briefly—over six centuries of purgatives, and for the benefit of many ascetics, crowned with high success in the mysteries of faking and purging, he has described six hundred kinds of purgatives. As there are six hundred purgatives, so there are, says the son of Atri, five hundred astringents of which only fifty are *par excellence*, or, so to speak good for something. Now, as a brief account would not be suitable for persons of little intelligence, and a long account would not be printed, Aragbadhiya proceeds to give an account which is neither short nor long, which ingenious course goes to his credit in "Karma." Such at least would seem proper and just; but Aquiveca, his pupil, said: "O, illustrious Rishi, of the fifty really good astringents, forty, as I perceive, are just the same things with a different name;" to which the son of Atri replies in effect that a person of intelligence will not criticise his master, or trifle with the grandson of Charaka Samhita. The six hundred purgatives are made, says the Science of Life, for the six different kinds of constipation. One hundred for each kind, and the five hundred astringents for the six different kinds of tastes, one for each taste and one for a change. Here the illustrious son of Atri publishes some verses, and then expounds the lesson called Matracituja, which is the Science of Diet.

Now, concerning this, the light of Asia, and father of cholera, namely, the son of Atri, affirms that food taken in due measure, without injuring the constitution or taking the six hundred purgatives, certainly bestows strength, color, health, and length of days. Says the master: "One should not, with loaded stomach take such heavy diet as cakes and similar preparations, and unhusked paddies. With even an empty stomach, these should be taken in proper measure. Dried meat, dried potherbs, esculent roots of the nymphæa lotus and the

stalks of the water-lily, should not be taken as habitual diet, in consequence of these being heavy. Nor should one take the meat of a lean, diseased or dead animal." The reason for this preference for live animals and this proscription of paddies is then given in more detail than we have space to furnish our perhaps already impatient readers.

The "Charaka Samhita" is being published in regular instalments, and it is not all out as yet. Hence the fragmentary character of the specimens we have given.

News of the Week.

The Babies' Hospital.—Dr. A. Blair Thaw, of New York, has given $10,000 to the hospital for the erection at Seabright, N. J., of a cottage to be used as a country branch during the summer. The corner-stone was laid on September 24th, with appropriate ceremonies, including addresses by Drs. A. H. Smith, E. L. Keyes, R. B. Kimball, and others. The country hospital will have twenty-eight beds, and will be ready for use next season.

"The Circle of Willis," the first social organization of the united professions, held its opening reception in their club-house on the evening of October 6th. There was a large attendance. The opening address of welcome by Dr. Frank A. McGuire, the presiding officer, and known as the Grand Chief Demonstrator, touched upon the emancipation of the Doctor socially, his relation to the laity, with patriotic allusions to the Columbian celebration. He was followed by Dr. W. B. Wallace, Dr. Chas. Milne, Dr. Julius A. Roth, Dr. E. Sander, Dr. Wm. Deane, D.D.S., Thos. E. Fraser, Ph.D., E. Schyer, and Counsellor Mayer, with recitations and singing by Mr. Ed. Stanley, of the DeWolf Hopper Opera Co., and others. A feature of the occasion was the presentation of the Anatomical Circle of Willis by Dr. Irving Haynes, Demonstrator of Anatomy in the University Medical College, which was framed, and occupied a prominent position on the walls; with also an original copy of the "Anatomy" of Dr. Willis, over two hundred years old, presented by Dr. N. E. Brill, President of the Society of Medical Jurisprudence and State Medicine. A collation was served with the usual social amenities which obtain on such occasions.

We trust that the Circle of Willis will always maintain its proper circulatory equilibrium, that no stray embolus, intrusive thrombus, or escaping clot may disturb the harmony of its tributary resources.

Do Doctors Get Cholera?—The impression that the physicians who attend cholera patients do not get the disease is not well founded. Of the fifty doctors who went to Hamburg to assist in the work there, hardly one, we are told, escaped a more or less severe choleraic attack.

Cholera and Fright.—Miss Annesley Kenealy writes from a Hamburg Hospital to the *British Medical Journal*: "It has been said that at least two-thirds of cholera patients die of fright, but the experiences on which this opinion were founded were gathered in India, where it is doubtless true. Though possible in the highly nervous Hindu, it is not easy to believe of the phlegmatic German; yet some of these people have a stricken, startled stare. The delirium or lethargic drowsiness, both of which are common, show that the disease makes some special attack upon the nervous system. It is stated that the brain and nervous centres are being now more affected than in the earlier days of the epidemic. I have seen two cases of absolute dementia resulting from cholera, the patient being perfectly imbecile and apathetic, looking with vacant, meaningless eyes, the features pinched, the complexion dusky, the temperature persistently and considerably below the normal. In both cases—which ended fatally—there was the utmost difficulty in persuading the women to take food. Some of the patients shriek wildly, and at the top of their voices day and night."

The Treatment of Cholera at Hamburg.—The Hamburg correspondent of the *British Medical Journal* states that Dr. Rieder, assistant at the *Allgemeine Krankenhaus*, has found tannin enemata prove totally ineffective, it is also the case with the administration of camphor, ether, and salol by the mouth. Subcutaneous injections of salt solution did good in some cases, but the greatest benefit was derived from intravenous infusions of salt solution.

Elective Cæsarean Section.—On September 28th, at the Kensington Hospital for Women, Philadelphia, Dr. Charles P. Noble performed Cæsarean section on a primipara having a scolio-rachitic flat pelvis, with a true conjugate, estimated at two and three-quarter inches. The woman being at full term, the operation was done at a selected hour instead of permitting her to fall in labor. This makes the fourth Cæsarean section done in this hospital, and the sixth done by the surgeons of the hospital. All the previous cases have recovered. In the recent case the mother and daughter are doing well.

Changes of Address.—Much as we should desire to please our subscribers it has been found impossible to respond to the numerous requests to publish changes of address.

The Board of Health of Savannah, Ga., has adopted a new and sensible plan for securing a quarantine officer at that port. Notice was given that examinations of applicants for the position would be held in New York, Philadelphia, Savannah, and New Orleans, the successful candidate to receive $2,000 per annum salary and to hold the office for three years. The examination required the name, age, residence, college, the date of graduation, a statement of the hospital experience, if any, whether the candidate was subject to sea sickness, and his experience in microscopy and bacteriology.

Doctors as Popular Leaders.—A statement having been made in a German professional work to the effect that Mr. Gladstone had prophesied that doctors would become the leaders of the people, a correspondent wrote to the Prime Minister for the purpose of ascertaining the truth of the matter. In reply Mr. Gladstone said: "So far as regards the exact words cited in your letter, I cannot positively say aye or no, and I rather think that I should in using them have added some qualifying or limited expressions. But it is certainly a fact that for a very long time I have believed the medical profession to be both in a state of absolute advance from the progress of its science—this, it may be said, is mere commonplace—and of relative advance from the particular features attaching to our civilization in its onward movement."

Dr. William Macewen has been made Surgeon to the Royal Infirmary at Glasgow, and Regent Professor of Surgery to the University of Glasgow.

The New York State Association of Railway Surgeons will hold its Second Annual Meeting at the Academy of Medicine, 17 West Forty-third Street, New York, on November 14, 1892. The profession is cordially invited.

Dr. W. A. Wile, of Danbury, Conn., has been elected Surgeon-General of the G. A. R.

Dr. Reynold W. Wilcox, of this city, has been elected Surgeon-General of the Sons of Veterans.

A New Treatment of Oöphoro-salpingitis.—Every practitioner is aware of the unsatisfactory means at our disposal (short of abdominal section) for the treatment of the above condition. At the best, in most cases, the patient is relieved of the acute symptoms, leaving the disease in a chronic stage for a weary length of time. Dr. Auvard, of Paris, announces the successful treatment of two cases by means of intermittent pressure, which he applies in the following manner: A Gariel air-pessary is introduced into the vagina and a bag filled with shot is simultaneously maintained over the site of the abdominal induration. The weight of the shot is gradually increased from 750 to 1,500 grammes, and the bag is kept applied for from two to three hours every morning and evening. During the interval (the pessary being also removed) hot vaginal injections and a cold enema are administered. In one case quoted, where a very tender swelling the size of a hen's egg could be felt in the right broad ligament, the tumefaction had completely disappeared after ten days of this treatment, and in three weeks the woman was well. In another case of oöphoro-salpingitis induced by intra-uterine exploration, internal and external intermittent pressure, by means of a Gariel pessary and a shot-bag weighing one kilogramme, practised once daily for an hour and a half, relieved all the suffering and greatly reduced the swelling.—*Lancet.*

Eleventh International Congress.—As a recent notice in the MEDICAL RECORD has informed our readers, the Eleventh International Congress will meet in Rome, Italy, from September 24, to October 1, 1893. By an official letter dated August 22, 1892, and signed by Professor Guido Baccelli, President, and Professor E. Maragliano, Secretary-General, Dr. A. Jacobi, of New York, has been directed to form an American Sub-committee. Its membership is not yet complete, but on it are already found, beside that of the Chairman, the names of Drs. William Osler, of Baltimore, S. C. Busey, of Washington, N. S. Davis, of Chicago, Charles A. L. Reed, of Cincinnati, William Pepper, of Philadelphia, F. Peyre Porcher, of Charleston, James Stewart, of Montreal, and Alexander J. C. Skene, of Brooklyn, N. Y. In the interest of facilitating the trip to Italy, and reducing the expense, arrangements will be made with the steamship companies. According to a communication from the Central Committee—contained in a letter of the Secretary-General's dated September 14th—the North German Lloyd proposes to reduce the fare to Genoa by twenty per cent., and that of the return trip by ten per cent. It is expected that still more favorable terms will be secured.

Quarantine in Canada.—At the recent meeting of the Canadian Medical Association, held at Ottawa, resolutions were adopted calling for the appointment of a pe manent executive, whose duties it will be to supervise matters relating to the public health. It was also urg that houses of observation and detention of suspects, a hospitals for treatment of sick, be supplied and equipp at Niagara and similar border points; and further, th all passenger ships should be provided with all necessa apparatus for the disinfection of baggage and clothin with isolation rooms for the treatment of those sick suspected contagious disease, and with apparatus f sterilizing the drinking-water. Resolutions were al adopted calling upon the government to put the quara tine station at Grosse Isle in perfect order, and equip with all the appliances necessary to meet every possil emergency. Finally, it was suggested that, in view of t imminent danger of cholera reaching America in 18 the government should consider the expediency of pr venting immigration to Canada from infected countri

Eighty-two Cents a Day.—A private telegram fro Halle, recently published in the *Berliner Tagbla* stated that several physicians (who, in response to t appeal made by the Hamburg authorities for ext medical assistance, undertook service in that city witho having stipulated definite terms) were offered 3s. 6d. their daily remuneration, whereas laborers engaged f the transport of the sick are being paid at the rate 15s. per day! On refusing such a preposterous offer t doctors in question, the writer says, were abruptly d missed without a word of thanks.

Dr. Charles E. Sajous, of Philadelphia, editor of *T Medical Annual,* has been named a Knight of the Legi of Honor by M. Carnot, in recognition of his servic to the French colony in Philadelphia. Dr. Sajous is French descent.

The Singing-master and Modern Physiology.—T latter-day singing-master is nothing if not scientific, sa *The British Medical Journal,* and his acquaintance wi the anatomy of the vocal organs is as extensive, a sometimes as peculiar, as Sam Weller's knowledge London. The following extract from an "imagina conversation" (not by Walter Savage Landor, but by anonymous American humorist) amusingly illustrates t effect likely to be produced on the untutored mind the scientific jargon affected by our "up-to-date" pr fessors of singing. A lady, who had taken her daugh to have her voice tried by several of these superior p sons, returned home much discouraged, and gave the f lowing report to her husband: "The first professor sa that Almira sings too much with her borax. If she kee on she will get digestion of the lungs. He said s ought to try the abominable breathing and practise s fudgery. Then the next teacher told me she ought sing with her diagram, and not smother her voice in t sarcophagus. Then the next he poked a looking-gl down her throat and said the phalanx was too small, a the typhoid bone and the polyglottis were in a bad wa and I never knew that Almira had so many things down h throat, and I am afraid to let her sing any more for fea will kill the poor girl." We may laugh at this poor M Malaprop, but her experience points a moral which m be commended to the attention of those who undertake train the voice by the light of the laryngoscopic lamp.

Society Reports.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, May 25, 1892.

H. P. LOOMIS, M.D., PRESIDENT, IN THE CHAIR.

Solitary Tubercle of the Suprarenal Capsule.—DR. MARTHA WOLLSTEIN exhibited under the microscope a specimen showing a rather unusual form of tuberculosis of the suprarenal capsule. The specimen had been taken from a child of ten weeks, who had been admitted to the Babies' Hospital a short time before death with symptoms of dyspepsia and malnutrition. The child had been nursed only one month, and then fed on cow's milk for two weeks previous to admission. There was a decidedly phthisical family history. At the autopsy the brain was found to be normal; there were miliary tubercles in the lungs, and a cavity in the left apex containing greenish pus. The bronchial glands were moderately enlarged, and many of them were cheesy; there were tubercles in the liver and spleen, but nothing was found in the kidneys except uric-acid infarctions. The suprarenal capsules were normal in size, and apparently so on section, as were also the stomach, intestines, and mesenteric glands. Sections from the lungs showed acute miliary tuberculosis, the distribution being for the most part peri-bronchial. The sections from the bronchial glands showed conglomerate tubercles, and as the entire centre of the nodule was cheesy, it was impossible to say whether the poison had been brought to the nodules by the lymph current, or by the blood. In the medullary portion of the suprarenal capsule, beyond the point reached by the incision, was one small tubercle, and some of the sections from this portion showed small round cells, and others single giant-cells, but no tubercle bacilli were present.

The presence of such a single, discrete tubercle in the suprarenal capsule is quite rare, large cheesy masses being usually present. The specimen evidently illustrated a very early stage of tuberculosis of this organ, and the situation in the medulla was explained by the greater vascularity of that portion. From the amount of peri-bronchitis present, it is probable that the tubercle bacilli gained entrance through the lungs by aspiration, and that then the lymph-nodules of the spleen, liver, and supra-renal capsules became successively infected. The healthy condition of the entire alimentary tract negatives the idea that the tubercular infection had its origin in the child's food.

Carcinoma of the Breast Following Traumatism.—DR. R. H. SAVRE presented gross and microscopical specimens from a case of carcinoma of the breast which gave a rather strange history. The woman was thirty-eight years of age, and the chest-walls indicated that she had been the subject of rachitis in her youth. There was no family history of malignant disease, except that the grandfather had had an epithelioma of the lip. In November, 1890, while carrying a heavy load of dishes, she fell, and was struck in the thorax by some of the falling dishes. She was examined by a physician, who expressed the opinion that she had sustained a fracture at the junction of the costal cartilage with the fourth rib, on the right side. In May, 1891, she again fell and injured the breast on the right side. This was followed by pain in the breast, and the appearance of a line of induration and swelling extending from the site of the first injury to the nipple. Some time after this she also noticed a small nodule in the lower part of the breast. In March, 1892, after a slight blow on the same breast, a yellowish pus began to discharge from the nipple, and this continued up to the time when she first came under the speaker's observation. An examination of this discharge showed no tubercle bacilli present. The breast was removed, together with one enlarged axillary gland. There was a small nodule in the lower part of the gland, and another in the upper portion. Below the pectoralis major muscle was a sinus containing pus, and leading up to the fourth rib, where there was some dead bone. Another sinus extended from this point to the nipple. Microscopical examination showed the nodules in the breast to be carcinomatous. The case was interesting on account of the possible connection between the traumatism and the development of the carcinoma.

Demonstration of the Amœba Dysenteriæ in the Tissues.—DR. J. S. ELY demonstrated under the microscope the amœba dysenteriæ in the ulcers of the colon and in an abscess of the liver. The material had been kindly furnished him by Dr. J. W. Brannan, and was particularly interesting as the specimens had been taken from the remarkable case of recurrent abscesses of the liver which had been recently reported to the Society by Dr. Edebohls. Dr. Ely said that the whole subject had been so carefully worked out and described in an excellent monograph by Drs. Councilman and Lafleur, of the Johns Hopkins University, that additional comment was unnecessary. The speaker said that on a previous occasion he had found this amœba in the stools of a patient, but, so far as he knew, this was the first time observers in this locality had had an opportunity of seeing the amœbæ in the tissues. The specimen had been stained with the ordinary double stain of hæmatoxylin and eosin.

Diffuse Infiltrating Sarcoma of the Heart.—THE PRESIDENT presented gross and microscopical specimens which had been removed from a single lady, twenty-five years of age, who entered the New York Cancer Hospital for the purpose of having an excessively hypertrophied breast removed. Her general health was good. The enlargement of the breast was of rapid growth, uniform, non-nodular, and but slightly painful. Before the operation was undertaken she developed a low form of fever, accompanied by intense dyspnœa and some delirium. She died suddenly at the end of the fourth week. The case being of peculiar interest was examined by a number of physicians. Those who ventured a diagnosis pronounced the disease typhoid fever. There was no eruption or enlargement of the spleen. The autopsy was made twenty-four hours after death, and at this time rigor mortis was present. Both breasts were enlarged, one to about four times the size of a normal breast. The body was well nourished, and there was an abundance of subcutaneous fat. The pericardium was distended with a sanguineous fluid, and the visceral layer was covered with a plastic exudation. The heart was hypertrophied, weighing sixteen ounces. There was no valvular lesion, but the cavity of the left ventricle was dilated. The walls of both ventricles were increased in size; the left measured 1½ ctm.; the right, ½ ctm. They were of a light-gray color, and softer than normal. The walls of the auricles were also increased in thickness. The coronary arteries were normal. The lungs, with the exception of pulmonary œdema and congestion, were normal. The liver was normal in size, and presented the "nut-meg" appearance. The spleen was normal. The kidneys were enormously enlarged, measuring six to eight inches in length; their capsules were non-adherent, they were softer than normal, and of a light-yellow color. On section, the cortex was increased in thickness and the markings gone. The kidney presented the gross appearance of the "granulo-fatty kidney." An examination of the intestines revealed nothing abnormal; there were no typhoid ulcers. A few of the mesenteric glands were enlarged to the size of an olive, and the only lesion found in them on microscopical examination was hyaline degeneration of the capillaries.

The microscopical examination of the heart-muscle and of the kidneys revealed a most peculiar and interesting condition. Between the muscle-fibres of the heart were cells, larger and differing in appearance from pus-cells, or the cells of early connective-tissue formation. These cells were arranged in rows, or packed together

between the muscle-fibres. These cells were found between all the muscle-fibres, which showed the effect of the compression by a certain amount of degeneration. Sections were cut from different places on both sides of the heart, and the same changes were found in all. Staining by Gram's method for micro-organisms reveal ed none of these organisms. A microscopical examination of different portions of the cortex of the kidney showed the renal tissue everywhere packed with these peculiar cells. Among the cells could be seen the compressed tubules. The capillaries of the glomeruli were normal, and contained none of these cells. No micro-organisms were present. In a very few places between the cells a delicate fibrinous stroma could apparently be discovered.

The speaker said that he had never before seen such condition in the heart or kidneys, and the only conditions which could account for the microscopical appearances already described were diffuse suppurative myocarditis, nephritis, diffuse round cell infiltration, and diffuse infiltrating sarcoma. He believed it to be the last, as the cells were like the round cells of sarcoma, and between them in places was an intercellular substance. The enlargement of the breast he believed to be due to a rapidly infiltrating round-cell sarcoma. By metastasis the heart and kidneys were secondarily involved. Next, a pericarditis was developed. The excessive dyspnœa and the sudden death were explained by the cellular infiltration interfering with and compressing the muscle-fibres of the heart; in fact, it seemed surprising that such a heart could beat at all. Unfortunately, pieces of the breast were not removed for microscopical examination. A careful study of the literature of diseases of the heart-walls has aided but little in understanding this case. Sarcoma of the heart, even as a secondary affection, is a rare condition, and when it occurs it is generally circumscribed. Orth speaks of a rapidly advancing sarcoma infiltrating the walls of both ventricles without producing a tumor. Drs. Prudden and Biggs had examined the specimens, and had stated that they had never met with this condition before. The former believed the lesion to be sarcomatous, and the latter was inclined to look upon it as a diffuse suppuration.

Dr. S. T. Armstrong said that the case reminded him of a similar one which had come under his observation while in command of the Marine Hospital at Memphis, and which was published in the "Annual Report of the United States Marine Hospital Service for 1886." The patient was a negro, who when first admitted had some bronchial symptoms, which were succeeded by diarrhœa. He was under treatment for about two weeks previous to his death, and the case was at first looked upon as one of typhoid fever. At the autopsy two tumors were found in the brain, which seemed to have developed in the pia mater, one in the right frontal lobe and the other in the left side of the cerebellum. The only other abnormality observed at the autopsy was an enlargement of the lymphatic glands, and of the liver, spleen, kidneys, and suprarenal capsules. Sections were made of all these organs, and microscopical examination showed the same round-cell infiltration observable in the specimens just exhibited under the microscope. His case was reported as one of lymphadenoma, or that variety of lympho-sarcoma which involves the glandular organs of the body.

Dr. J. M. Byron said that he recalled seeing in medical literature a report of a number of cases of diffuse infiltration of the heart and other organs by metastatic malignant growths, but he had not seen or heard of anything just like the case under discussion. The specimens under the microscope possessed no reticulated tissue, or any of the characters which would characterize it as a sarcoma, and the cells were much larger and flatter than those seen in a small round-cell sarcoma; in fact, they resembled the "infant cells" of endothelioma.

Dr. J. S. Ely thought that the grouping of the cells in concentric layers around the blood vessels was characteristic of endothelioma.

Lobar Pneumonia, Possibly of Microbic Origin.—Dr. J. Lewis Smith presented specimens from a case of pneumonia occurring in a child, three and one-half years old. The child was an inmate of an institution where there had been during the past winter an unusually large number of cases of pneumonia of uncommon severity. The ravages of the disease in this hospital had been so great in contrast with those in another institution with which Dr. Smith was also connected, that he had been led to believe that the pneumonia in the former place might be of microbic origin. The specimens presented were from a case which fairly illustrated the type of the disease. He hoped an examination by the Microscopical Committee would throw some light upon the etiology. The child had been in good health up to May 9, 1892, when the temperature suddenly rose to 105° F., the respirations to 60, and the pulse was correspondingly increased in frequency. There was also some cough. Within twenty-four hours the disease could be located in the left upper lobe by the bronchial respiration and dulness over this area. After about a week the disease appeared to be about to resolve, when the opposite lung became similarly affected over its upper portion. The child died yesterday of heart-failure, with a pulse of 180, and a temperature of 105° F. The rapid onset and the absence of a previous bronchitis would seem to indicate that the disease was lobar rather than lobular.

The Microscopical Committee was requested to report upon the specimen at the next meeting.

The Society then went into executive session.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE SANITARY CONGRESS—THE CHOLERA—SANITATION OF DWELLING-HOUSES—DEATH OF MR. EDWARD COCK.

London, September 17, 1892.

The Thirteenth Annual Congress of the Sanitary Institute has been held at Portsmouth during the past week. Sir Charles Cameron, of Dublin, presided, and delivered an address in which he drew attention to the continuous progress in sanitation and steady fall in death-rates which had taken place during the Victorian era. The death-rate in London had been declining in spite of the increasing concentration of the population. In 1841 there were but twenty-five persons to the acre; in 1891 there were fifty-six per acre. In London, however, the unfavorable influence of the increased density of population was much more than compensated for by the great improvements which had been effected in the general hygienic conditions. Speaking of typhoid fever in Dublin, Sir Charles Cameron said he had come to the conclusion that there, and perhaps elsewhere, it was miasmatic, or earth-born. In Dublin during the last decade one person in one hundred and forty-four living on clay soils had typhoid fever, and one in every ninety-two living on gravels. The disengagement of the micro-organisms of the disease took place when the soils became dry, and this occurred more frequently with gravel than with clay. When all the organic *débris* produced in towns was quickly removed, and when the dangerous subterranean atmosphere was prevented from entering our dwellings, or even our streets, when sewage flowed steadily day and night through well constructed main sewers, and when our soils were thoroughly drained, and kept free from filth, then we might expect to see a substantial reduction in the mortality caused by typhoid fever, and, indeed, by other diseases. He urged the adoption of a triennial census, and remarked on the importance and utility of vital and moral statistics. The recent reduction in the death-rate, he said, was most marked in the case of infective diseases, of which phthisis was the most fatal. We should not be discouraged because of Koch's failure to destroy the tubercle bacillus; in time we should be

le to control its ravages and perhaps to extirpate it altogether.

The sectional proceedings commenced on the second y of the Congress. Professor Kelly read a paper on the nsus, in which he advocated a quinquennial one. Dr. oves read a paper on "Isolation Hospitals." After s had been read and discussed, the following resolution s proposed and unanimously carried: "That the Sani- y Institute be recommended to ask the Local Govern- nt Board to allow a special expenditure for cholera pre- itions and hospitals, and that such expenditure should me out of the Imperial and not out of the local rates." . Fairchild read a paper on "Difficulties in the Pre- ition of Infectious Diseases," in which he pointed out t the notification of infectious diseases by the head of e family was seldom carried out in many districts, and reby delay was caused in the taking of proper steps by sanitary authority. A resolution was moved by Mr. discott, seconded by Mr. Fairchild, and carried unani- usly, "That this meeting is of opinion that the removal an isolation hospital of all persons, irrespective of social tus, who are not, in the opinion of the sanitary officers, ctually isolated, should be made compulsory." Dr. beck Nevius read a paper in which he endeavored to w that the abolition of the Contagious Diseases Acts had l no injurious influence on the public health; his statis s were, however, disputed by the President and others. paper by Dr. Harris, advocating the compulsory treat- nt of phthisis, did not meet with a more favorable re- tion; those who took part in the discussion maintained t more good would be done by medical officers becom- popular educators in matters affecting the public health. a communication from Dr. Newsholme the condem- ion of the meat of tuberculous animals was recom- nded as a precautionary measure; a resolution recom nding that where a portion of an animal was affected h disease the whole carcass should be condemned was sequently carried unanimously.

On Wednesday Professor Notter, of Netley, took the air in the Section of Sanitary Science and Preventive dicine, and, dwelling on the danger of cholera, warned itary authorities to look to crowded areas. A discus- n then took place on tuberculosis and its causation by ing tuberculous meat, drinking the milk of tuberculous mals, or breathing impure air. Mr. Oldfield read a per in which, having regard to the danger of tuber- osis, he urged vegetarianism, but his views did not meet h much favor. A resolution was passed recommend- the abolition of ordinary slaughter-houses in towns of re than twenty thousand inhabitants and the substitu- n of public abattoirs. It was also resolved that the ecution of the Vaccination Acts ought to be transferred m the guardians to the sanitary authorities, with medical cers of health as their agents. Among other commu- nations to this and other sections were papers on "The rtality of Children in Dublin" (by Sir Charles Cam- n), "The Disposal of the Dead" (by the Rev. F. Lau- ce), "The Physicial Condition of Children" (by Dr. War-), and several on the disposal and treatment of sewage.

The latest intelligence as to cholera is favorable, there ng, according to information received at the offices of th Local Government Board up to last evening, no case a present in the United Kingdom. Further pressure is ng put on the Government from various quarters to p a stop to the immigration of destitute aliens. The dical officers of all ports are still exercising the utmost vdance. The latest returns show that the disease is dining in Hamburg, but stationary in Paris.

A renewed discussion has lately taken place in the pss on the sanitation of dwelling-houses—stimulated, dubtless, in no small degree, by the alarming intelligence o he near approach of cholera. Nearly everyone agrees th t some reform is needed, and that an intending tenant sl uld be able to obtain better guarantees that a house is n a sanitary condition than are at present generally o ainable. One suggestion is that further legislation should be sought to compel landlords to put their houses in sanitary order; another is that sanitary authorities should be persuaded to use more thoroughly the powers which they already possess. A useful proposal, and one which has already borne fruit, is that a voluntary system of registration of dwelling-houses should be adopted. So far this has only been carried out at certain health-resorts where visitors form a large proportion of the community, and lodging-house keepers are naturally desirous of doing all they can to attract them. If such a system, however, can be popularized in all health-resorts, there are hopes that it may be taken up more generally in time, and perhaps ultimately be universally adopted.

The death is announced of the well-known surgeon, Mr. Edward Cock, at the advanced age of eighty-seven. He was a nephew of Sir Astley Cooper, and received his professional education at Guy's Hospital. He subsequently became a member of the surgical staff, retiring as consulting surgeon in 1871. He was, perhaps, hardly known to the present generation, but in his prime he had no inconsiderable repute as a surgeon, and especially as an authority on the diseases of the male generative organs.

THE HEALTH-RESORTS OF THE RIVIERA.

(Continued from p. 327.)

XI.—MENTONE.

(From Our Special Commissioner.)

MENTONE AS A REAL HEALTH-RESORT—SITUATION AND ACCESSIBILITY—THE SHELTERING MOUNTAIN GIRDLE—METEOROLOGICAL OBSERVATIONS AND CLIMATIC PECULIARITIES—HUMIDITY—PARADISE LOST AND REGAINED—THE ROCHERS ROUGES AND THE BONE-CAVE—OVER-BUILDING AND HYGIENE—AN UNSATISFACTORY WATER-SUPPLY—DRAINAGE PROBLEMS—HEALTH OF THE NATIVE POPULATION AND PREVAILING DISEASES—PROFESSOR PROUST'S REPORT, AND THE PROPHYLAXIS OF CONTAGIOUS DISEASES—A MONUMENT TO DR. BENNET—SOME MEDICAL OPINIONS ON MENTONE—COST OF LIVING AT MENTONE—OUT DOOR LIFE AND AMUSEMENTS.

GENOA, April, 1892.

EVER since Dr. Bennet discovered, described, and developed this place for Anglo-Saxon people, Mentone has maintained its reputation as a real health-resort. It is certainly not, like Nice, a town of winter pleasures for people of leisure, and those human moths who ever swarm where sweetness and light abound; it is not, like Cannes, a lovely garden city, peopled by wealthy villa-owners; it is not, like Hyères, a staid and simple town, with a dwindling winter colony of aged cronies and conservative British stand-bies. No, Mentone is an old Italian village, gobbled up by France in 1860, on which English enterprise and discernment have grafted a prosperous winter sanitarium for sedate and sober-minded invalids.

From my personal observations I am inclined to believe that the average foreigner goes to Nice to have a good time. And if he gets sick there, he promptly decamps. He goes to Cannes because he can afford to maintain a costly and luxurious winter home in sunny Provence. He goes to Hyères because he is British and most of his great-grandparents went there before him, and latterly because the Queen has lived there. He goes to Monte Carlo to gamble, shoot at pigeons, and improve his morals. But the average *habitué* of Mentone goes there because he is sick and wants to get better, and because his doctor said so too. For doctors do not now send their patients to Nice, because they fear its treacherous attractions. Nor do they send them to Cannes, because they too rarely have the chance to do so. They don't send them to Hyères either, because only the dead doctors know about that place. And they certainly don't send them to Monte Carlo, because they would like to have their little accounts settled on the patient's return, and pilgrims home again from there never pay. So that, if the doctors really want to send sick people to the

French Riviera, they all advise Mentone. The result is apparent in the large proportion of wan and tottering wrecks that gasp along the promenade, and eject copious cultures of all the approved bacilli into as fair a landscape as you could wish to see.

It is necessary to reckon with this factor of the presence at Mentone of so many invalids, in weighing the advantages of competing health resorts. For it is no secret that some patients find the company of sick people so depressing as to neutralize the benefits that would otherwise accrue to them from a sojourn at a given place. It happens frequently enough, therefore, that patients will take leave of Mentone on their own responsibility, merely to avoid the daily meeting of so many fellow-sufferers. Nevertheless, as Mr. E. A. R. Ball[1] puts it, Mentone is *not* the town of which an Irish visitor is said to have remarked, that "but for an occasional funeral there would be no life in the place!"

Mentone, or in French *Menton*, is charmingly situated along a pretty crescentic bay, extending from Cap Martin on the west to Mortola Point on the east, a distance of some six miles if we follow the sinuous coast-line, and of four miles in a straight direction. The old town is closely built, on a small elevated promontory rising perhaps 130 feet above the level of the sea, and dividing the bay into two halves, known as the *Baie de l'Est* (East Bay) and the *Baie de l'Ouest* (West Bay). The East Bay has recently received the well-merited recognition of a separate railway station. This popular quarter is called Garavan. A cottage is found there with the following characteristic inscriptions: *Quartier de Gare-au-vent.—Le soleil, le climat doux et salubre, et l'eau de mer réunis constituent les principaux remèdes créés par le bon Dieu.—Louange à la gloire du bienfaiteur suprême qui a daigné nous en favoriser.—Première villa construite à Menton, pour y attirer les étrangers. par J. B. Franciosy*, 1855.

Mentone is only fifteen minutes by train in an easterly direction from Monte Carlo, and nineteen miles from Nice. It is less than seven miles westward from the Italian frontier station of Ventimiglia, and only ten miles from Bordighera. The place can now be reached by express from Paris in twenty-two hours.

The strangers' quarters are found only in the new town, which extends both to the east and to the west of the old one. It almost hugs the shore, and runs along for a distance of over three miles. Some hotels and villas have also been built more inland, and the town with its outskirts has begun to encroach on the hill-sides. But in the more sheltered eastern part little headway can be made in that direction, as the nearer mountains are too steep and too close to the shore. The whole town is well protected by mountain ramparts, which, when viewed from the sea or from an elevation, resemble an amphitheatre, with an opening southward facing the Mediterranean.

A number of mountain streams, which sometimes assume river-like proportions, run through the Mentonian territory. The Carsi, Borrigo, and the Gorbio, empty into the West Bay, and one torrent coming down from the *Val de Menton* is conducted into a main drain, which flows into the sea near the breakwater. The ravines through which these currents wind their way also constitute so many channels for cold atmospheric currents. Invalids will do well to avoid them, except on days of perfect calm.

Mentone has long enjoyed the reputation of being the warmest and most sheltered resort on the Rivieras. It has also been credited with having the most equable climate. As I will show, later on, these statements require certain modifications. The mountainous semicircle that rises up behind the town is, without doubt, an effective barrier to the cold winds from the north, and to a less extent to those from the east and the west. But chilly winds are felt at Mentone just as elsewhere on the Riviera, in spite of the contrary assertions of partisans.

[1] Mediterranean Winter Resorts. London: L. U. Gill, 1888.

Here is an extract from Mr. Brown's "Wintering a Mentone:" "With all its vaunted security from biting winds, and its mountain shelter from the northern blasts Mentone lies most invitingly open to the south, south east, and southwest, and winter winds from these directions can be chilly enough at times. What tells so keenly upon the weak and susceptible is the land breeze, which regularly at sundown steals upon the mountains toward the sea." In view of such truthful accounts, and always remembering the deep ravines intersecting some of the hills, it would seem that to describe Mentone as only exposed to "the sweet influences of the balmy south"[1] is more poetical than accurate.

The rugged outline of the rocky mountain peaks that form so beautiful a background to Mentone has frequently elicited words of admiration from pleased beholders. Indeed this semicircle of bold, bare heights is one of the conspicuous scenic attractions of the French Riviera. The mountain summits attain a height of from 3,000 to 4,500 feet. The highest peaks are named Mount St. Agnes. the Berceau, the Roc d'Ormea, and the Grammont. The climatic importance of these mountains seems sufficient to warrant the following description, borrowed from Sparks:[2]

"The posterior and lateral boundaries of the Mentone district are formed by a rough semicircle of limestone mountains, the highest peaks of which exceed 4,000 feet. The eastern wall rises almost abruptly from the sea, between Cap Mortola and the Italian frontier, at the gorge of the Pont St. Louis, and runs in a north-northwesterly direction till it culminates in the double peak of the Berceau (3.575 feet) and of the Grand-Mont, or Grammont (4,478 feet). The mountains now take a westerly direction, and between the two peaks of the Rasel (4,095 feet) and the Cime d'Ours (3,932 feet) leave a gap or pass by which the carriage road from Mentone to the Col di Tenda and Turin descends into the plain of Sospello. This pass, which is the lowest point of the amphitheatre of mountains which guards Mentone, is 2,574 feet above the sea. From the Cime d'Ours, a continuous chain (the highest peaks of which are the Aiguille or Mont Baudon (4,192), north of Mentone, and the Agel (3,695 feet), about five miles and a half west of the town), bends gradually round through west to south, until it terminates in the bold headland of the Tête du Chien (1,761 feet) above Monaco. A spur sent down from the Agel to Cap Martin forms the western geographical boundary of the Mentone district. Except at its eastern and western extremities the main bulk of the limestone wall does not come nearer the Mentone coast than three miles. The lower hills or ridges, which run from the mounts nearly to the sea, and at almost right angles to the shore, though in most cases originating in underlying spurs of the limestone, consist almost entirely of a more or less compact sandstone, evidently an old sea-bottom which has been upraised. These hills, to which Mentone largely owes the variety of its scenery and of its excursions, attain a height of from 400 to 700 feet." So much for Sparks.

Back of all these mountains still higher ranges rise successively until the main chain of the Maritime Alps, with peaks 9,000 feet high, is reached. And far inland we come finally upon the true Alps of Savoy and Dauphiny. I have purposely been thus explicit, for robbed of its mountain girdle Mentone could not exist as a winter health-resort.

As Mentone is really frequented by many invalids, it will not be out of place to indicate in what manner its meteorology and climate are peculiar. Now those who have endeavored to show that it is a health-resort absolutely *sui generis*, have erred on the side of excessive zeal. And yet it would hardly do to dismiss the subject by merely saying that Mentone enjoys a Riviera climate; for there is no doubt that appreciable differences exist

[1] The Riviera, by H. Macmillan, p. 161. London: J. S. Virtue & Co., 1892.

[2] The Riviera. London: J. & A. Churchill, 1879. p. 256.

between what may be reasonably expected at the East Bay and what ought to be looked for at the West Bay. Indeed the uniform experience of competent physicians shows that the therapeutic effects are not identical at these two places, separated though they be by a very short distance. But I shall return to this point later on.

The following table (borrowed from Sparks, but slightly modified) will convey as much information as it is possible for figures of that kind to convey. In regard to the authorities named, it should be mentioned that Andrews and Freeman may be set down as West Bay observers, while the records of Farina and Castillon refer to the East Bay.

TABLE OF METEOROLOGICAL OBSERVATIONS AT MENTONE.

Authority.	October.	November.	December.	January.	February.	March.	April.	May.
Freeman: Mean temperature	62.2	57.2	51.7	49.2	50.3	51.5	58.6	63.1
Farina and Castillon: Mean temperature	65.3	55.3	50.5	49.9	50.6	53.9	58.7	65.7
Andrews: Mean maxima	. . .	61.9	58.0	57.5	57.4	59.4	65.2	.....
Andrews: Mean minima	.....	46.4	41.5	40.6	39.7	42.0	48.0	.....
Freeman: Mean daily range	10.7	9.9	10.5	10.5	11.4	11.8	12.5	.....
Freeman: Barometer	29.84	29.91	30.06	30.03	29.86	29.71	30.01	.....
Freeman: Relative humidity	72	75	72	72	70	74	74	.....
Freeman and Andrews: Rainfall	6.37	3.73	3.47	1.24	1 45	3.69	3.29	2.37
De Bréa: Rainy days	9.0	9.4	5.9	7.9	5.5	6.1	7. 3	9.3
De Bréa: Very fine days	16.1	15.4	19.5	17.3	16.3	17.7	15.3	15.4
Stiege: Calm days	.....	22	23	19	20	18	.....	.....
Stiege: Windy days	.....	8	8	12	8	13	.....	.....

In addition to the information contained in the above table, it may be remembered that, as elsewhere on the Riviera, the months having the greatest number of rainy days do not necessarily correspond to those having the largest amount of actual rainfall. A glance at the following record clearly shows this. The table is found in the work of Sparks. (Gradation from left to right.)

	Highest.							Lowest.
Rainfall	Oct.	Nov.	Mar.	Dec.	Apr.	May.	Feb.	Jan.
Rainy days	May.	Nov.	Mar.	Apr.	Oct.	Dec.	Feb.	Jan.

As the Riviera climate is noted for its great dryness, it seems rather surprising to find the range of humidity set down as so wide for Mentone. Stiege has found it as high as 96 in December, and again as low as 16 in December and January. He also gives 83 as the mean for one season, and 68 for that immediately following. Sparks's lowest figure only descends to 35. From 70 to 75 will probably represent a fair average, although no two seasons appear to be alike. Other Riviera resorts are better off than Mentone in this respect, provided, of course, that an equable dryness is a therapeutic desideratum for the patient in question.

The Mentonese have a modest little tradition concerning their lemons, which are really exceptionally fine and are exported to distant cities, where they always command high prices. This is the tale as told at Mentone:[1] When the pair of original sinners were driven from Paradise, mother Eve managed to snatch a luscious lemon which she secreted somewhere about her person. (A clever trick.) She decided to bestow it upon the country that should most remind her of her late home. In the course of her weary wanderings she came at length to a site so filled with light and rich in fragrance, that she verily believed to have once more returned to Paradise. Hesitating then no longer, Eve gave up her lemon, saying: "Behold! this coast is worthy of you!" Now, the spot where this occurred is where Mentone's lemon groves still yield many millions of the same fruit that once grew in Paradise.—*Si non è vero, è ben trovato*

[1] De Marseille à Menton, par Jules Adenis, p. 360. Paris: A. Hennuyer, 1892.

At the East Bay are found the famous *Rochers Rouges* and the celebrated bone-caverns which have puzzled even real geologists, let alone mere medical beholders. Mr. Hare alludes to the red rocks and caves as follows: "A rugged path beneath the cliff leads round the rochers rouges to a platform whence there is a splendid view of the town and of the mountains, embracing the distant coast of France, the Esterels and Antibes with Monaco, Mont Agel, Turbia, Monts Garillon, Baudon, St. Agnes, and the Berceau. The red rocks themselves are exceedingly fine, both in form and color. They are overgrown with rue, rosemary, and euphorbia. In their caverns a great number of bones of the stag, goat, horse, wild boar, wolf, wild-cat, and rabbit, have been discovered, with an immense quantity of shells of the still existing kinds of fishes. These, and the number of fragments of rude weapons in flint also discovered here, led to the supposition that these caverns must once have been inhabited by Troglodytes as described by Strabo and Pliny."

Only a short distance from the red rocks is the wildly picturesque gorge of St. Louis, spanned by a bold bridge of but a single wide arch. Half-way across the bridge you first touch Italy. Under this bridge the remains of an old aqueduct are seen to this day. "The rocks, towering precipitously above on either side, are remarkably bold and rugged, while the eye looks from the white arid heights, bleached by the fierce glare of the sun, down over the parapets into the cold, dark chasm, with a shiver. This weird ravine now marks the appropriate and well-defined boundary between France and Italy. The Italian douaniers have their station-house by the road-side, a little beyond the bridge, perched prominently on the highest part of the precipitous rocks." (Macmillan.) The French custom-house is situated nearer Mentone. And from all appearances smuggling does not flourish in the immediate neighborhood.

Taken as a whole, the French Riviera is now decidedly overbuilt, as empty villas and apartments, complaining landlords, and a perceptible tendency to rather lower rents sufficiently attest. This feature is particularly noticeable at Cannes and Nice. But Mentone also shows it. Speculative booms have been more or less successfully engineered at all these places. The receding wave of prosperity may teach the "promoters" a useful lesson. From a strictly sanitary point of view, safety for the Riviera resorts lies in keeping the individual towns small. But with anything like a spasmodic growth, drainage and other difficulties always threaten to overwhelm the towns, the authorities being unable apparently to appreciate the bearing of suddenly enlarged demands. The officials are without doubt honest enough, and they all have benevolent intentions. But modern sanitary science is to most of them a book sealed with seven seals.

I was gravely assured on one occasion that a particular kind of suspected Riviera water was perfectly pure, for the Mayor himself had a bottle sent to his office every morning, which, after vigorous shaking, was duly held up to the light, smelled, tasted, and then invariably pronounced perfectly pure and potable. Very likely when the Mayor has a cold in the head the President of the Council performs by deputy, the daily smelling test. The simplicity of this olfactory method would seem to recommend it to a more extended sphere of employment.

Apart from inevitable drainage difficulties which arise when villages are transformed into towns, another drawback of overbuilding consists in the fact that the hastily erected modern dwellings do not fulfil the just requirements of invalids. They cater too much to the *insouciance* of the tourist or the love of show of the *rentier*.

A French physician, Dr. Alméras, in a report made to the Medical Society of Mentone, has observed that fewer patients now visit the littoral than was formerly the case. The Carnival festivities still attract heterogeneous and ephemeral crowds, and many tourists with circular tickets make a brief stay there. But those invalids who formerly enriched the Mentonese by repeated long sojourns are diminishing in numbers.

Of course Egypt is just now a decided competitor of the Riviera as a winter home for lovers of sunshine and warmth; yet I have no doubt that more attention to sanitary details and matters of public hygiene would greatly enhance the value of this coast to the sick. What is sauce for a pleasure resort is not always sauce for a climatic health station.

In the words of Dr. Onimus: "*Nulle part les questions d'hygiène public ne sont aussi importantes que sur le littoral; elles sont la base de la fortune des habitants, et la négligence de leur mise en pratique peut entraîner des conséquences désastreuses.*"[1]

Mentone is not very abundantly supplied with drinking-water by a company controlling a branch of the Nice Canal de la Vésubie. It is the same kind of unsatisfactory water as is conveyed in an open canal to Monte Carlo. The natives appear to take it without detriment to their health, in spite of its inevitable organic impurities, and the large proportion of lime compounds which it contains. There is no doubt that many strangers have also used this water without knowledge of the risks thus blindly taken. The water is collected in large reservoirs before final distribution. Filters are in common use, but I am sure they are mere delusions and snares so far as any real protection from possible infection is concerned. Boiling is the sole safeguard that will make the Mentone water potable. I append an

Analysis of Mentone Drinking-Water.[2]

Water Clear and Without Odor. One Litre of Water Contains:

	Grammes.
Organic substances and volatile products	0.074
Dry residue	0.397
Organic matter (permang. in acid liquid)	0.0014
Organic matter (permang. in alkaline liquid)	0.0005
Carbonate of lime	0.105
Sulphate of lime	0.280
Alumina	traces
Magnesia (sulph. carbonate)	0.002
Silica and insoluble earthy compounds	0.007
Chloride of sodium	0.0058
Nitrates	0.001
Nitrites	0.00
Ammonia	0.00
Albuminoid ammonia	slight traces

The town of Mentone possesses a number of large-calibre main drains, with collateral branches running through most of the streets, the whole net-work of sewers discharging by several outlets into the sea and harbor at no great distance from the shore. The authorities entertain the utterly mistaken notion that their former drainage problems have been satisfactorily settled by the establishment of these channels, which were completed over ten years ago. But it may be questioned whether Mentone was not better off in the old days than with a drainage system which fails to drain, and which extends to noxious gases a permanent invitation to enter apartments from which they were formerly excluded.

In the little country settlements of Southern Europe all house-slops and excreta are scrupulously preserved in closed caskets or bins, which are carried to such places as call for a fertilizer. Those who have no personal use for such substances sell them to the peasants who have.

In Provence and Liguria this system has worked well enough in the purely agricultural districts. Mentone formerly employed this primitive method of refuse disposal without detriment to her health. But when the place became the resort of increasing numbers of Englis winter residents the natural demand for modern improv ments arose. At first cesspools were sunk into th ground. Then the authorities yielded to the pressu brought to bear upon them, and constructed drain These, however, were only intended to carry off surfac water and kitchen waste, but not house soil proper. Th old cesspools remained in use, or new and generally in perfect ones were established. As the new English cal inet arrangements, with their large flow of water, were ne introduced, the cesspools rapidly filled, and to prevei the expenditure of frequent pneumatic aspiration, ove flow conduits were made to connect with the street drain It is the same story which has been repeated in almo every particular in all the Riviera health-resorts. Excep at Cannes cut-off traps and adequate vent-pipes are sti all but unknown. Now Nice and Cannes are wide-awal and realize their needs, whereas Mentone is half aslee in reference to this vital matter, and may therefore fai much worse than some of her competing neighbors. Wit a plenteous water-supply and numerous flushing-tank such as are now found at Nice and Cannes, there woul be less danger in the existing Mentone arrangement But at the latter place they really have to rely on tl accident of rain to accomplish what should be regulate by absolutely reliable contrivances. The stenches whic at times arise from the culverts in the streets of Me tone, and at certain points along the shore, should wai normally sensitive nostrils that there is something rotte somewhere. But the natives seem positively to enjc smells that fill the uneducated newcomer with disgust.

It is high time that the Mentonese should descend fro their pedestal of lofty disregard for the sanitary requir ments of an ambitious health-resort, and buckle down t work of a practical and efficient kind, otherwise th may discover what it means to be left to stew in the own juice.

In this connection I may observe what I have alreac elsewhere alluded to, namely, that defective sewerage sy tems may be fraught with grave dangers of a potenti rather than actual kind. But is it prudent or necessa to await an actual outbreak before instituting radical r forms? I hope not.

In spite of living in cramped quarters, amid unhygien surroundings, the Mentonese continue to enjoy fa health. The foreigner is always more liable to suff than the native from time-honored evils. Typhoi fever has repeatedly occurred there, but fortunately it ha never assumed the proportions of a virulent epidemi The foreign colony, while not exempt, has not been vi lently attacked.

Through the kindness of the English Consul, M Charles Palmaro, and the exertions of Dr. Stanley Rer dall, as well as the courtesy of M. Louis Laurenti, th Mayor of Mentone, I am able to present the followin official table:

Table of Deaths at Mentone for the Past Five Year

Population (exclusive of foreign colony), 9,387.

Year.	Deaths.	Pro Mil
1887	212	22.
1888	183	19.
1889	189	20.
1890	214	22.
1891	199	21.
Total	997	106.

Average mortality for five years, 21.2

Taking the official record for an average good ye (*i.e.*, that of 1888) I select the following details as to tl

Causes of Death Among Natives at Mentone.

	Cas
Typhoid Fever	
Measles	
Scarlatina	
Diphtheria	
Phthisis[1]	

[1] L'Hiver dans les Alpes Maritimes, p. 119. Paris, 1891.

[2] Supplied through the courtesy of the Mayor, and in conformity with the analysis made by the Compagnie Generale des Eaux, November 17, 1891.

[1] Twenty-seven cases o death from phthisis are reported among t foreign colony for the same year. A marked contrast.

	Cases.
Tubercular affections other than phthisis	18
Pneumonia	24
Bronchitis	6
Gastro-intestinal affections	10
Unclassified	51

It is somewhat unfortunate that so large a proportion of deaths is found under the heading "Unclassified," but at any rate even close contact with the natives would not seem to entail any extraordinary danger on winter visitors. Nothing special is to be noted at Mentone with regard to prevalent maladies.

According to Sparks, facial neuralgia is very common; and I have no doubt that the sudden changes of temperature occurring on the Riviera invite attacks of neuralgia even in those not ordinarily subject thereto. Phthisis and tuberculosis appear to be more frequent now than formerly. But this should not surprise us, in consideration of the vast quantity of bacillary material carried into Mentone every winter by foreigners.

Scrofula is said to be on the wane at this resort, probably because the native population is now better fed than formerly. From the tables kindly supplied by the Mayor it would also seem that there are plenty of old people at Mentone.

Professor Proust, of Paris, the Inspector-General of the sanitary service for the state of France, has quite recently examined Mentone. The Mayor has kindly given me a copy of his report, and the following extracts from this important official document may prove instructive. I have retained the language of the original, because it reads almost like English.

RÉPUBLIQUE FRANÇAISE.

PRÉFECTURE DES ALPES-MARITIMES.

"*Extrait du Rapport de M. le Docteur Proust, Inspecteur Général des Services Sanitaires.*

VILLE DE MENTON.

". . . . Puis venant à parler de la mortalité constatée à Menton pendant l'année 1890, et de la disparition presque complète de la variole par suite des vaccinations et revaccinations pratiquées en masse, M. le Docteur Proust ajoute:

"Le corps médical de Menton et la municipalité se prêtent un mutuel et constant appui pour que la prophylaxie des maladies transmissibles soit assurée, et la population obéit docilement aux injonctions de l'administration; elle se félicite de son concours et ne manque pas de le rechercher chaque fois qu'elle en éprouve la nécessité. Cette ville a en effet compris, notamment depuis le tremblement de terre, que son relèvement si rapide et sa bonne renommée auprès des étrangers dépendaient en grande partie de sa salubrité.

"(Les sages dispositions arrêtées par le Syndicat des hôteliers de la ville pour la prophylaxie des maladies transmissibles sont reproduites in-extenso dans le rapport de M. l'Inspecteur Général, qui les fait suivre des réflexions ci-dessous):

". . . . On pourrait discuter assurément quelques-unes de ces dispositions; mais telles qu'elles sont, elles témoignent d'une initiative trop précieuse pour qu'il n'y ait pas lieu de les signaler à l'attention publique, et de féliciter le Syndicat des hôteliers de Menton de n'avoir pas hésité à pratiquer de lui-même, pour le plus grand profit de sa clientèle, tout un ensemble de prophylaxie pour lequel certaines sociétés scientifiques n'ont pas encore osé se mettre d'accord."

Mentone, as a flourishing health-resort, may be in itself regarded as the best and most eloquent monument that a foreign physician could ever hope for in France. Nevertheless, it is satisfactory to perceive that, at the beginning of this season, a subscription list was opened for the purpose of supplying funds for the erection of a suitable monument to the memory of him who did so much for his adopted home. The Mayor heads the list, and under his patronage it is believed that enough money can be raised to do suitable honor to Dr. Bennet's memory. People so often forget live doctors that they ought to be glad of an occasional opportunity to remember a dead one.

Having given my own impressions of Mentone, it seems advisable to record the opinions of other observers.

Now, most medical writers have expressed favorable views concerning the climatic advantages of Mentone. But on the equally important sanitary aspect of the place they are singularly silent. It is true Dr. Bennet has freely admitted the vital significance of sanitation, and, indeed, claims to have made hygienic conditions the chief basis of his researches. But the more recent authors have little to say on the subject, perhaps for the reason that much praise cannot be given to the Mentonese on the score of sanitary improvements.

According to Dr. Bennet:[1] "The exceptional warmth of the winter climate of Mentone, even for the Riviera, is proved, beyond all question or doubt, by the presence of groves of large, healthy lemon-trees, which ripen their fruit, without artificial protection, every year in the fullest perfection, in nearly all the ravines and on the warmer hill-sides." That "the vegetation of Mentone is that of the most favored portions of the Riviera" (Hassall) is quite true, but almost all these winter-stations have little nooks where a similar luxuriance is observed, and some of the valleys at San Remo are quite as well provided with flourishing lemon-trees as those of Mentone.

The same author (Bennet) sums up the characteristics of the climate of Mentone as follows: "Absence of frost, prevalence of northerly winds, moderate dryness of the atmosphere, complete absence of fog, paucity of rainy days, clearness and blueness of sky, general heat and brilliancy of sun, a cool night temperature, a bracing coolness of the air, and a mean difference of 12.8° F. only between the day maximum and the night minimum."

I believe this summary to be a fair statement of the real conditions in all but the last item. It is possible that an average of 13° may represent the difference between night and day. But the difference between sun and shade temperature is probably five times as great. And invalids are more concerned with the diurnal variations of sun and shade temperatures than with shade maxima for the day and nocturnal minima.

Writing in the *British Medical Journal*, February 9, 1884, Mr. Ernest Hart says of Mentone:

"Its groves of olives, its luxuriant lemon-trees, its palms, bananas, and carouba trees, testify to the absence of frosts; the clustering roses, the mimosas, laden with sprays of golden blossom, the primroses, daisies, and violets remind us of the beauties of our temperate zone.

"Of all the towns of the Riviera, Mentone is the most sheltered; its vegetation is the most perfect; its site, surroundings, and arrangements are most carefully adapted for the invalid. The healthy are learning from the experience of the sick. The pleasures of a winter holiday in the Riviera are known as yet only to a small minority of those who wearily plod through dull, foggy, and icy months of labor, rendered heavier by failing health and spirits, and half valueless by jaded and threadbare tediousness of unremitting toil in sunless surroundings."

This was written eight years ago. Mentone has changed but little since then, and the only exception I must take to Mr. Hart's eulogium is the statement relating to "arrangements most carefully adapted for the invalid." If Dr. Bennet's prudent counsels had been more largely heeded, if the needs of invalids had been always fully considered, Mentone would be by long odds the most desirable health-resort on the Riviera.

The climatic advantages of Mentone are summed up by Dr. Burney Yeo as follows: "Considered generally, the climate of Mentone may be taken as a favorable example of the Riviera climate; and it has the great advantage of possessing, as it were, two climates, suited to

[1] Winter and Spring on the Shores of the Mediterranean, pp. 14 and 81. London: J. & A. Churchill. 1875.

two different classes of invalids. For those who especially desire warmth and shelter, and a quiet, indolent life, with plenty of sunshine and sun heat, and who like to live close to the sea, there is the mild and sedative climate of the East Bay, with its southern exposure, and its almost complete protection from strong winds. For those, on the other hand, who find advantage from a more bracing air, who like to have the sun heat tempered by cooling winds, who cannot feel at ease without 'ample space, and room enough' to wander free over hill and valley, or who are irritated by the monotonous beat of the tideless sea against the shore—for those there is the West Bay, with hotels and villas, some on the seashore, some a little removed from it, some—and those the newest and best—far removed from the sea, and high up on the hill-side. The value of a climate of this kind in many forms of pulmonary affections, in certain chronic, gouty, and rheumatic conditions, in states of anæmia, in convalescence from many acute diseases, and in the many infirmities to which old age is exposed, is incontestable."

The East Bay being squeezed in, as it were, between a high mountain and the seashore, complaint has been made that the excessive warmth was enervating. Dr. Prosser James says: "Beneath its eastern cliff a warmer temperature is to be obtained, but only at the cost of exercise and fresh air. It is the depressing influence of this confined air which has made some authors attribute to Mentone a sedative influence"

Dr. C. T. Williams states: "The climate is warm, very dry, and stimulating; it is often very equable. There is a want of circulation in the atmosphere, particularly in the eastern bay, where, in addition, the close proximity of most of the houses to the sea subjects patients too much to the noise and stimulating effects of that element."

For my own part, I believe that Dr. Hassall has more clearly stated the case than either Dr. James or Dr. Williams. He writes,[1] that each of these bays possesses both advantages and disadvantages, the one being suitable for one class, and the other for a different class of cases. During the three colder winter months there is no reason to complain of the closeness of the atmosphere of the eastern bay, it is only early in the autumn and in the spring that it will be found at times too warm and close for some, and consequently somewhat debilitating. The climate of the western bay has been compared to that of San Remo, but the comparison is one which cannot be maintained. The mean annual temperature of San Remo is 60.13°F., the mean three months' winter, 48.89°F., that is to say only 0.09°F. less than the eastern bay, while the number of rainy days is but forty-five. Then, again, San Remo is protected on the west by a lofty headland 800 feet in height, and there are no breaks or gaps in the surrounding semicircle of mountains comparable to those made by the Carei and Borrigo valleys.

If you want to live well at Mentone you will have to pay for it. Hotel charges are a little less than at Cannes and Nice, but Mentone has long ago deserted the ranks of the cheap places. Lodgings are also slightly lower than at Cannes and Nice, but the cost of housekeeping appears to be about the same at all the leading Riviera resorts. The stores do not tempt you by the brilliant display of costly luxuries as at Nice, but all the essential needs are amply provided for by obliging shopkeepers. You are, of course, everywhere expected to pay the usual tribute of extra charges exacted of all foreigners, and pay without grumbling. This is only fair, in view of the fact that you are not openly taxed for sunshine, although rooms "*au midi*" are always much dearer than those having a northern exposure.

A daily open-air concert that would painfully jar on the tympanum of a lover of real music, a mild Carnival (including dainty *batailles des fleurs*) such as is befitting the serious character of a winter sanitarium, an energetic match-playing tennis club, some cycling, plenty of walking and driving along roads that are often insufferably dusty, the climbing of hills and mountains by paths of tortuous picturesqueness to points of varied beauty overlooking gorgeous panoramas, timid attempts at boating, an occasional eccentric hazard in a piscatorial direction, meek dances and weak teas—thus qualified in deference to an undue preponderance of seedy-looking curates—lots of hazy sketching and amateur color splashing on defenceless canvas, frequent contemplative baskings in fervid sunshine, a gathering of beautiful wild flowers, the devout admiration of lemons and oranges of unusual size, bountiful opportunities to work off poor French and poorer Italian on an indulgent populace, the daily record of wind and weather, the pitiless resolve to write a book about all this and expect one's friends to read it—this about comprises the catalogue of those sinful acts of existence which you are expected to engage in at Mentone.

Life there is modelled after the fashion of those who needs must husband strength and store up energy for future use, and not at all as at Nice, where it takes its cue from idle loungers intent on feverish sport and ever thirsting for new forms of dissipation. And knowing what awaits you at Mentone, the place will surely not disappoint you. But go there expecting to find what never had a home in that quarter, and you are foredoomed to regret your choice. A cultured mind in an enfeebled body, no matter what may be its precise pathology, will doubtless find a winter season spent there of congenial benefit. But a feeble mind in a merely untutored body needs other vantage-ground of a more boisterously joyful kind for leading a life satisfactory to its own specific requirements. For him who has overdrawn nature's store of health, Mentone offers a fair chance of re-establishing a reserve balance. But if you are still blessed with a handsome surplus of bodily vigor, do not attempt to play the prodigal in this quiet, serious, sunny town on the shores of a smiling ocean.

[1] San Remo and the Western Riviera, p. 223. London: Longmans, Green & Co. 1879.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 8, 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	44	6
Scarlet fever	52	4
Cerebro-spinal meningitis	1	5
Measles	31	2
Diphtheria	58	21
Small-pox	6	1
Cholera	0	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0

Students at the Universities of Paris, Vienna, and Berlin number, respectively, 9,215, 6,220, and 5,527. In contrast with these there is a college in Sierra Leone which boasts of but twelve students and five professors. The total number of universities in the world, according to the *Minerve*, of Strassburg, is one hundred and forty-seven.

A Woman's Dental College in Sweden.—Miss Elena Lewin, a recent graduate of a dental college in Gothenburg, has obtained permission from the authorities to establish a school of dentistry for women in Sweden, and is now organizing the school and hopes to open it in Stockholm this autumn.

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Original Articles.

MOVABLE KIDNEY AND DISEASES OF THE GENERATIVE ORGANS IN THE FEMALE.[1]

By J. SCHMITT, M.D.,

NEW YORK.

In a lecture delivered some time ago on the subject of movable kidney, a physician of repute found fault with a colleague who removed the ovaries in a patient afflicted with this disease. Her ovaries were sacrificed, but the movable kidney, with its tormenting symptoms, remained as before.

In reflecting upon this subject we meet with so many interesting points, that I thought it worth while to present them in a connected and condensed form.

If we examine all women for displacement of the kidney, we are surprised at the frequency of the disease. I do not exaggerate when I maintain that at least one woman in ten is afflicted with a more or less advanced displacement, usually of the right kidney. We must, of course, spare neither time nor pains which a thorough examination of the kidney requires.

Under favorable circumstances the lower end of a normal kidney can be palpated.

For this purpose it is best to examine bimanually. The patient lies on her back, or on the sound side, with hips and knees well bent. On pressing one hand beneath the free border of the ribs, and making counter-pressure with the other hand over the region of the kidney posteriorly, letting the patient at the same time take a deep inspiration, the lower end of a normal kidney can usually be felt, provided the abdominal walls are thin, the intestines empty, and contractions of the abdominal muscles do not occur. The first stages, which consist in a simple loosening of the kidney, can easily be detected by this method. During inspiration the kidney slips downward, and if held at the height of inspiration, can be prevented from slipping back during expiration.

All degrees of displacement may occur, from a simple loosening of the kidney to its lodgement in the pelvis.[2] It generally descends behind the peritoneum between the layers of the mesocolon, sometimes more internally, projecting beneath the free border of the ribs; sometimes more externally, expanding the outer layer of the mesocolon.

As a rule, the intestine lies between the abdominal wall and a movable kidney; but with sufficient laxity of the peritoneum it may lie in direct contact with the anterior abdominal wall. In well-advanced cases we find the kidney either in the iliac fossa, or at the pelvic brim, to the side of the promontory.

Generally we are justified in pronouncing an oval, solid, easily movable tumor, which is tender on pressure, and situated in the lateral abdominal region, a movable kidney. Occasionally we are surprised at the varying results obtained by the examination. The first examination reveals a movable kidney beyond doubt; at a later examination we are unable to detect it. In these cases it is advisable to let the patient cough, or examine her in a sitting or standing posture.

I take the liberty of presenting two patients in whom the abnormal mobility of the right kidney can easily be determined by the above method of examination. In the one case the right ovary was removed for the relief of nervous disorders, but the presence of a movable kidney was overlooked. With the same right we might have extirpated the movable kidney, and allowed the ovary to remain; for the symptoms of a movable kidney are very similar to those caused by certain sexual disorders.

Patients with a movable kidney have a disagreeable feeling of weight and pressure in the abdomen—a feeling of dragging, as if a weight in the abdominal cavity were settling downward. They complain of pains in the hypochondriac and lumbar regions, which may radiate upward to the shoulder, or downward to the pelvis and thigh, ordinarily corresponding to the side of the displacement. Traction and pressure on the peritoneum and nerves in the vicinity of the displaced kidney give rise to manifold nervous disturbances, viz., peritoneal irritation, neuralgias, reflex phenomena, etc.

Bodily exertions aggravate, rest and lying on the back relieve, the symptoms. Such patients feel best on rising in the morning; walking about and attending to their usual occupations bring back their suffering. After the disease has existed for some time, rest in bed no longer procures the desired relief. Digestive disturbances are very common. They vary from a feeling of oppression, nausea, vomiting, to the most violent cardialgias. Gradually the whole complex of hysterical symptoms, and even mental derangements, may be developed.

It is not my intention to give an exhaustive record of all the symptoms dependent upon movable kidney. I refer only to such as are identical with symptoms produced by certain sexual disorders. The movable kidney puts the power of resistance of the nervous system to a test of as great an extent as do certain uterine and ovarian diseases. Women suffering from nervous debility—be it inherited or caused by faulty education, chronic diseases, or sorrows—are most seriously influenced.

In certain individuals a movable kidney produces no symptoms whatever. In others they may be limited to a single disturbance; while in still others it may give rise to the entire series of hysterical symptoms. We have this same experience in sexual disorders; the same disease which hardly annoys one patient may bodily and mentally incapacitate another.

The relations of movable kidney and the sexual organs may be considered from different points of view; the one dealing with a similarity of symptoms, I have just considered.

For the sake of completeness, though not within the scope of my paper, I would like to explain briefly to what extent a movable kidney, pregnancy, parturition, and menstruation may influence each other.

A movable kidney, located in the pelvis, has occasionally been discovered during pregnancy or during parturition. As far as I know, it has never interfered with the regular course of pregnancy or labor.

Movable kidneys sometimes become attached by an adhesive peritonitis, and if fixed in the pelvis may lead to errors in diagnosis, which are usually cleared up after laparotomy. An acquired movable kidney can generally be pushed upward from the pelvic cavity, whereas a

[1] Read before the Section on Obstetrics and Gynecology at the New York Academy of Medicine, February 25, 1892.

[2] Some writers distinguish between movable and floating kidney, and assign to the latter a proper mesonephron. This can, of course, only be demonstrated at the autopsy, and even then it might be difficult to determine what is congenital and what acquired. Clinically such a distinction is not appropriate, as the symptoms do not differ, and a movable kidney may become floating.

congenital one is immovable. The former preserve their shape more distinctly, while in the congenital cases changes in form and anomalies in the origin of the blood-vessels are not infrequent. (Orth.)

The discomfort of movable kidney is ordinarily relieved during pregnancy; the growing uterus pushing the kidney upward forms a natural support. There are, however, exceptions to this rule. I observed a patient who occasionally had severe attacks of pain on the side of the movable kidney even in the latter months of pregnancy. During the puerperal state the symptoms may return, even before the patient has left the bed. At least I have seen the return of the nervous and dyspeptic ailments of a right-sided movable kidney in childbed. In all probability the abdominal pressure during labor causes a return of the displacement of the kidney with its symptoms.

But little remains to be said concerning the influence of normal or normally acting sexual organs on a movable kidney. Some physicians maintain that a congestion of the kidney occurs at each menstrual epoch. This gradually leads to a relaxation and loosening of the organ, and finally to a sinking of the kidney. This, of course, is merely an hypothesis, which you can accept or reject as you choose. It is a fact, however, that the symptoms of movable kidney occasionally become aggravated during menstruation.

Though the relations of movable kidney to the normal sexual organs, which I have just described, be of subordinate importance, the relations to diseased sexual organs prove to be by far more interesting.

Certain of the genital diseases bear no relation whatever to a displaced kidney; they coexist only accidentally. I, at least, cannot detect any relation that a gonorrhœa or a pyosalpingitis might have to a movable kidney. On the other hand, however, a number of sexual disorders frequently occur in connection with a movable kidney; so that we are justified in assuming a mutual dependence and a common etiology. To this class belong retroflexion, prolapse of the uterus, cystocele, retrocele, and chronic inflammations of the uterus and ovaries. In order to make the relations of these diseases to movable kidney intelligible, I request you to recall to memory the etiology of movable kidney.

Many physicians ascribe tight lacing, which indirectly, by pressure on the liver, forces the kidney out of its position, as the chief factor in the causation of movable kidney on the right side. Others lay more stress upon the loss of fat from the adipose capsule of the kidney, which connects it to the adjacent tissues. Should the fat disappear as the result of wasting disease, then a loosening and sinking of the kidney take place. Continued coughing, straining in chronic constipation, in general all conditions which frequently and persistently maintain the diaphragm in an inspiratory position, are liable to produce a displacement of the kidney. Congenital conditions, abnormity in the attachment of the kidney, play an important part in so far that they predispose these individuals to acquire a movable kidney.

From the above it follows that the causes which lead to movable kidney are not the same, and must be determined in each particular case. On one point, however, a striking harmony seems to exist, namely, that women in whom the elasticity of the abdominal walls has been diminished, either by pregnancies, tumors, laparotomies, or wasting diseases, suffer comparatively frequently from a movable kidney. The relation of movable kidney to laxity of the abdominal walls can easily be understood by recalling the physiological action of the abdominal walls.

The abdominal contents are inclosed by elastic walls: the diaphragm with the lungs, the lower portion of the thorax, the abdominal parietes, and the floor of the pelvis. The pressure exerted by these walls on the abdominal contents, and especially on the elastic intestines, including the stomach, produces a tension within the abdominal cavity which is properly designated intra-abdominal pressure. In its production the abdominal walls are an important factor. Like an elastic band they encircle the abdominal contents, and owing to their contractility and expansibility accommodate themselves to the physiological and pathological changes in volume of the abdominal cavity. They keep the abdominal contents in apposition, and exert a pressure which, in addition to the anatomical attachments, offers an essential support in maintaining the relative position of the abdominal and pelvic organs.

Should the abdominal walls for any reason become insufficient, then a lowering of the intra-abdominal pressure results. With this a series of disturbances take place in the abdominal cavity, relating principally to the position of the abdominal and pelvic organs and the circulation. The changes consist in a sinking of the intestines, the liver, and the kidneys, and a flattening of the diaphragm. It has even been asserted by some that dilatation of the stomach and displacement of the transverse colon to the lower part of the abdominal cavity are caused by laxity of the abdominal walls, or its equivalent, a lowering of the intra-abdominal pressure.

The position of the uterus does not depend to so great an extent on the intra-abdominal pressure, although this is evenly distributed in the abdominal and pelvic cavities. Other causes must be added to produce a displacement. As a matter of fact we frequently find metritis and laceration of the pelvic floor with laxity of the abdominal walls.

Chronic inflammation of the uterus, endometritis, metro- and menorrhagia, may easily be caused by insufficient action of the abdominal walls. As the activity of the muscles is necessary for the production of an energetic blood- and lymph-current in the limbs, so the respiratory fluctuations give an impulse to the circulation which can only be efficiently maintained when the physiological pressure in the abdominal cavity remains normal. Should this be diminished, then hyperæmia of the venous system with its consequences can easily set in.

Another series of symptoms still remain which can be traced to the same cause—the lowering of the intra-abdominal pressure consequent upon laxity of the abdominal walls. To this category belong chronic constipation, disturbances of digestion, and pains due to traction upon the peritoneum and the nerves. Hegar attributes the lumbar pains to straining of the extensors of the vertebral column. Women with insufficient abdominal walls bring the lumbar vertebræ into lordosis, and their pelvis to a more marked inclination, in order to throw the centre of gravity further forward.

From these explanations it will be apparent why some authors do not consider movable kidney as a distinct disease, but merely as a symptom of diminished intra-abdominal pressure. The abdominal contents are partially deprived of their support, and more strain than usual is put on the anatomical attachments. Traction on the mesentery and the peritoneum—so they claim—produces disturbances of the stomach, the intestines, the nerves, the blood-vessels, etc. This view is undoubtedly correct for many cases in which a pronounced laxity of the abdominal walls is present, *i.e.*, thin, folded walls with but little contractile power, diastasis of the recti, etc. It will not hold good, however, in those cases, not infrequently met with, in which the power of the abdominal muscles is unimpaired.

Thus far I have said nothing of the part taken by the perineum in the production of intra-abdominal pressure. Its action is similar to that of the abdominal walls. It forms the elastic boundary of the pelvis below and posteriorly, and participates in the respiratory movements; it bulges during inspiration and flattens in expiration. Its influence in the production of the intra-abdominal pressure is not of as great importance as that of the abdominal walls, since the elasticity of the perineum acts at an angle on the abdominal contents indirectly through the zigzag formation of the uterus and vagina.

Laceration of the perineum, when trifling, is not necessarily followed by a decrease in the intra-abdominal pressure, because the uterus, vagina, and remainder of the perineum can offer a sufficient amount of elastic resistance. Should these, however, prove insufficient, then a lowering of the intra-abdominal pressure necessarily follows. This is greatest in the pelvic cavity, and the detrimental results will especially affect the pelvic organs; the more so if a normal, or but slightly diminished, pressure is produced in the abdominal cavity above. This pressure acts in all directions, and in the pelvis, the place of diminished resistance, will give rise to displacements of the pelvic organs—descensus uteri, cystocele, and rectocele.

Whether relaxation and laceration of the perineum alone are sufficient to produce a relaxation of the intestine and sinking of the kidney, I do not venture to say. They undoubtedly, however, predispose to the displacement, especially when combined with insufficient abdominal walls.

The circulatory disturbances in the pelvis are analogous. The venous congestion of the pelvic organs becomes the more marked the greater the difference between the abdominal and vaginal pressure; a condition that can easily be established in cases of insufficiency of the perineum with proportionately normal abdominal muscles. At all events there is nothing forced in the conclusion that the coincidence of movable kidney and chronic inflammation of the pelvic organs is not merely accidental, but due to common causes. That the relations must not always be as stated, but that local conditions may occasionally be the principal causes, need hardly be added.

I must not, however, omit the view, that displacement of the pelvic organs may produce displacement of the kidney by traction on the uterus.

The disturbances in the excretion of the urine remain to be considered. Pelvic exudations, tumors, and retroversion of the uterus, may, by compression or torsion of the ureter, lead to obstruction of the urine with its consequences. The hydronephrosis and inflammatory changes of the kidney thus produced give rise to increased weight and a sinking of the organ. On the other hand, obstruction to the urine not infrequently occurs in movable kidney independent of sexual diseases. It is produced by twisting of the ureter, and gives rise to acute hydronephrosis, severe colics, fever, vomiting, etc.

Notwithstanding the frequency of sexual diseases and movable kidney, one thing appears striking, namely, that we are seldom in a position to observe at the bedside the characteristic results of the occlusion of one or both ureters, viz., diminution of the excretion, hæmaturia, temporary albuminuria, and nephritic colic. In all probability, the symptoms of the first stages of hydronephrosis are overlooked, or they are so slight that even the patient does not pay any attention to them. In the majority of cases the obstruction to the passage of urine is overcome by the force of the renal excretion, without causing intense colics or a palpable transitory renal tumor.

Concerning the treatment, it is obvious that he will be most successful who takes both diseases into consideration. Whoever directs his treatment for lumbar pains, dyspeptic and nervous disorders, exclusively to the sexual organs, without paying any attention to a movable kidney, must not be surprised at a partial or complete failure. And he who attempts to relieve the symptoms of a movable kidney by an elastic belt, without simultaneously reconstructing the perineum, will hardly be satisfied with his results.

I stated at the beginning that the symptoms of sexual diseases and movable kidney which are similar or identical refer principally to the nervous system. There is even a similarity in the treatment. In neuroses, in epilepsy, for instance, movable kidneys have been extirpated. On the same principles displaced ovaries or diseased uterine appendages have been removed.

The propriety of this procedure has been the subject of repeated and lively discussions. The removal of a healthy movable kidney has been justly condemned, and that of the uterine appendages considerably restricted. If the salpingeo-ovaritis be purulent, then the removal of the diseased parts is fully justified. If it be of the so-called catarrhal variety, and the discomfort and recurring peritonitis greatly interfere with the patient's enjoyment of life or ability of earning a living, no plausible objection can be raised against the removal of the appendages. Those, however, who remove such uterine appendages under the supposition that the general nervous symptoms will disappear with the local inflammation, will meet with success and failure.

We have, up to the present time, no fixed rules upon which we can assure the patient in advance that the operation will relieve her of her nervous disorders. Those, however, who operate for this indication should not lose sight of the possible existence of a movable kidney or an insufficiency of the abdominal walls; and, above all, determine to what extent the symptoms will be favorably influenced by appropriate treatment. This must be directed not only to the movable kidney, but also to the general health and nervous system.

In the majority of cases, the symptoms of a movable kidney can be alleviated by a well-fitting elastic abdominal belt. The results are most favorable in those cases in which laxity of the abdominal walls exists. They are highly doubtful if the kidney be fixed in its abnormal position.

The favorable result of an elastic abdominal belt is, in all probability, chiefly due to the support given to the abdominal walls. A great variety of different and complicated belts have been constructed, with the idea of keeping the kidney replaced. But when we consider that direct pressure on the kidney is generally impossible, because the kidney lies behind the intestines, then the efficacy of belts with plates and springs is questionable. Heavy pressure is not well borne, and the kidney generally slips downward behind the belt. We must be satisfied, therefore, with the action of pressure, applied indirectly through the abdominal walls and intestines, to restrict the movements of the kidney. These requirements, as a rule, are fulfilled by an elastic abdominal belt, beneath which, corresponding to the position of the kidney, I place a cushion, or have it fastened to the belt. The elastic belt covers the entire anterior abdominal wall down to the symphysis and Poupart's ligament, and to prevent its slipping, is supplied with elastic bands passing between the thighs.

Exceptionally we meet women who are not benefited by an abdominal belt. Should treatment directed to the general health and nervous system also be of no avail, then nephrorrhaphy may be resorted to. We must be careful, however, that the real object of the operation—the fixation of the kidney—is properly carried out and a recurrence prevented. The capsule of the kidney must be incised, its edges and the kidney itself stitched to the deeper layers of the wound, in order to bring about an intimate union of the kidney with the posterior wall. After nephrorrhaphy the use of the elastic belt must be continued.

125 Second Avenue.

Perforation of the Intestine by a Spoon.—Dr. Libotsky reports the case of a woman in the eighth month of pregnancy who was suddenly seized with the symptoms of acute peritonitis. She died in a few hours, and at the autopsy it was found that the duodenum had been perforated by a silver teaspoon, and the spoon itself was found lying in the peritoneal cavity. It was ascertained, on inquiry, that the woman, while suffering from post-influenzal mania two years before, had swallowed the spoon with suicidal intent. She was taken at that time to Billroth, who examined her carefully but could find no hard body, and expressed a doubt as to the correctness of the report.—*Centralblatt für Gynäkologie*, November 26, 1892.

STRAY THOUGHTS ABOUT DYSPEPSIA.[1]

By A. A. YOUNG, M.D.,

NEWARK, N. Y.

"If it does no good it will do no harm," is an old saw, too often quoted and too often obeyed, in the practice of medicine. To follow such a doctrine is to reduce what should be the science of medicine to chaos, a condition from whence it sprung. Any substance taken into the stomach must be wholly inert; must be incapable of producing any irritation, either by its presence as a substance or by its solubility and absorption into the system, if it be perfectly harmless. There is no medium ground, for only a line exists between the normal stimulation produced by digestion, and the irritation produced by products of indigestion. We know, regardless of our acts, that there is a necessity for treating each patient individually, according to our best judgment, and not by a "set formula." The formula of a particular physician for his particular patient may do particular good, but for our patient under other conditions may be ruinous.

Indigestion means something more than mere inactivity of the digestive tract, something more than a loss of "tonicity" to the entire digestive system; the cause for such disturbance may, and often does, reside remote from the affected organ. To cure this disease, or rather to assist nature to eliminate it, the patient must be studied as well as the books, the cause must be known in each individual case, idiosyncrasies must be met, or the patient by the treatment may be hurried on to despondency, hurried on to a premature grave.

Most forcibly have these thoughts presented themselves while looking over the various formulæ for indigestion as given in our standard text-books, or perusing the various papers issued by the manufacturers of the so-called digestive ferments, the mode of manufacture or the formula of which is seldom, if ever, correctly revealed; but a description of the mode of administration is never abbreviated. The manufacturer apparently regards the physician as an automaton, an object to act only as he turns the crank, and we are prone to accept the condition, appear wise, and say to the world, "I use anything that effects a cure," an acknowledged "cut and dry" system, an insult to scientific inquiry.

Gastric juice taken by itself cannot perform its work fully and properly in stomach digestion; it must be aided by other fluids which are excreted during the process of mastication and deglutition; it must be aided by the purely mechanical action of the organ itself, and perhaps by other forces and fluids that we know not of.

As is well-known, gastric juice contains about nine hundred and ninety parts of water in one thousand, and the remaining portion is made up largely of albuminoid matter, known as pepsin, and a free uncombined acid with sodium chloride, and a few minor ingredients. It is a well-known fact that pepsin alone, without its auxiliaries, is almost worthless as a digestant. It is also well understood that when stomach digestion is completed this digestive ferment is absorbed into the system, to reappear again at its proper station, ready for new but similar work. This digestive ferment, if it be deficient in acid, is not improved, but made positively worse, by the addition of pepsin in any form or under any name; it is the acid that is demanded and should be administered; this is also true of every ingredient of gastric juice. This proposition may appear self evident, but it is often violated by the physician's acts Too often does he act upon this principle, the case in hand being "dyspepsia;" he looks wise and says: Dr. John Doe, my authority, says in "dyspepsia" give pepsin, and so it is done without a thoughtful why on our part, much to the damage of the prescriber's reputation; much to the damage of the patient's health. Give pepsin when the gastric juice is deficient in acid? No, but relatively decrease your pepsin and increase your acid. Give pepsin when the gastric juice is deficient in water? No, of course not, but relatively decrease the pepsin, acid, etc., and increase the water. This seems to be, and is, the only rational method of treatment. Give pepsin when the stomach is inactive, when the glands are partially atrophied, when there is a want of "tonicity" to the organ itself? No, for the stomach must perform its own duties, nothing can take its place. Nature hates a lazy member, and she will eliminate it by atrophy if there be nothing for it to do.

The digestive organs, it is true, must rest when tired, but the ingestion of food or pepsin gives no rest, both mean work when taken into the stomach; the latter, if it has nothing else to do, will digest, will devour the very organ that gave it birth; the former, if the digestive ferments or other vital forces are deficient, forms a rich soil for the development of sarcinæ, torulæ, and other products of fermentation. Even the process of fermentation may be retarded or suspended, and the process of decomposition substituted, producing thereby products that are absolutely poisonous either by direct contact or absorption.

It is not the intention to universally condemn the use of pepsin; far from it; it has its uses as well as its abuses. That it is a powerful digestant cannot be denied, but its peculiar property is not properly exerted, except it be aided by other agents and forces; without its auxiliaries it must be worthless at best. The process of digesting a hard-boiled egg in a test tube is a fine experiment to illustrate the digestive or solvent power of pepsin, but worthless as far as demonstrating its therapeutical uses and value. The test-tube is a far different thing from the stomach with all of its vital forces in action; the one represents inert matter incapable of giving impressions to, or receiving impressions from, the digestants which it contains; the other is an active, living membrane, endowed with a mysterious force, which life can only give to it, and of which the gastric juice may be impregnated.

Normal gastric juice contains well-marked germicidal properties, but in proportion as it varies from the normal, in the same proportion does it become a source through which infective diseases may be propagated by germ-development. The arrest of germ-development may, and I believe does, depend upon the free chlorides in the gastric juice; but the activity of the free chlorides may depend also upon the normal amount of the remaining constituents. Harmony here constitutes activity, healthy growth; the opposite constitutes disease, "dyspepsia," if you so choose to call it.

From what has been said, it is fair to infer that the peptones, in a majority of cases of dyspepsia, are worthless; more, they are absolutely harmful, for the activity of the stomach, as well as of the gastric juice, depends in a measure upon a limited or small amount of peptones; it is well known that when the food in the stomach is super-saturated with peptones, digestion is retarded until the latter are wholly or partially absorbed; hence, to lessen the necessity for work in the stomach, is to lessen its ability for labor. The constant use of predigested food must produce partial atrophy of both the muscular and glandular structures of the stomach. Predigested food may be theoretically good for the patient; he may be forced to take it against his will, but even then absorption and assimilation may be as impossible to accomplish, when nature says no, as to force a horse to drink against its will after being led to water. What good, then, comes from this pre-digested food, if it be not assimilated?

Milk alone given for nourishment, simple as it is, is harmful, though to it be added the lime-water, the pepsin, and the pancreatin, if the dyspeptic has a positive dislike for such food. The dislike for any particular kind of food is a warning of its positive harmfulness, and one, too, that cannot be overlooked with impunity. It reveals, in a certain degree, the inharmonious relation that exists between the so-called food, the digestive fluids, and those forces on which their activity, in a measure, depends.

[1] Read before the Central New York Medical Society, May 30, 1892, at Syracuse, N. Y.

Simple solution differs widely from normal digestion; the former is purely mechanical, while the latter is chemico-vital. It is in the latter process that pepsin plays an important part in stomach-digestion.

During this process it loses its vital force in the transformation of food, forming largely peptones, and when it has thus done its work, then, and not until then, it is prepared to pass the pyloric orifice and become reabsorbed, revitalized, and returned to the peptonic glands, from which it is again induced by the stimulating action of food. If gastric juice be deficient in any or all of its component parts, either quantitatively or qualitatively, if improper food be taken, or food taken at improper times, pathological conditions are at once induced which are expressed by that bewildering term dyspepsia, a term that represents little by being too general.

The treatment of this affection depends upon the proper differentiation of the conditions that produce it —conditions that are susceptible of classification, and without which it cannot approach even the dignity of a science, which is a classified knowledge. Isolated facts mean but little; comparative facts, though few in number, mean much. A classified knowledge points us to an intelligent, rational method of treatment with mathematical certainty; it says to us: "This is the way, walk ye in it."

TEACHING DEAF CHILDREN TO HEAR.

By LILLIE EGINTON WARREN,

NEW YORK.

THE education of the deaf-mute has opened a new field of late, and possibly my observations in a certain direction may be of some interest. Until a comparatively few years ago, deaf children were neglected, pushed aside, hidden from view; a humanitarian spirit lifted them out of the depths, and proved they were capable of some advancement; recently, however, scientific thought has been directed to their condition. Because a child did not respond when various sounds were made, he was pronounced wholly deaf, nothing could be done for him. Sufficient study was not given to his peculiarity, which might be called suppressed hearing. If he failed to recognize one sound, another was made before the first had reached his mind; in short, the length of time requisite to bring forth results when special pains have been taken, justifies the expression, slow hearing. These children hear slowly. This fact not having been realized, people jumped to the conclusion of total lack of hearing, and the deaf child has been given no opportunity to make the feeble efforts he might, if encouraged.

The work is extremely difficult. The pupil fails to appreciate what is being done, and has to be helped along contrary to his own wishes. He would much prefer to be let alone. Signs at first mean much more to him than articulation and speech-reading, but the latter is more attractive than the early attempts to listen. A small amount of hearing is of value in training the voice and opening the mind to an appreciation of words expressive of sound, even if instruction has to be given largely through the eye and the child forced to rely upon speech-reading. Of late, however, I have taught little children through the hearing alone, and am encouraged to persevere by the gratifying results. In instances where it was possible, co-operation at home by the parents, under my direction, has been helpful. Persistent efforts certainly have aroused these children's perception; there is reason to believe continued instruction will, in a measure, make up their loss, and with the development of mind, stronger power will be manifested.

Following are notes of some cases under instruction during the past year in my school for deaf children:

CASE I.—A boy who, at four years of age, after continued efforts to call his attention to sounds, began to notice the clapping of hands, whistling, and a trumpet. At the end of seven months' daily drill he hears a bell, the hand-organ, a canary's song, and the barking of a dog. He evinces much pleasure at singing when near, and turns quickly at the sound of a whistle in an adjoining room, behind closed doors. He can repeat readily a number of words when spoken near either ear, or at a distance of a few inches in loud or low voice. Some of the words have breath sounds, as papa, ship, whip, shoe, flower, and up.

CASE II.—A girl, ten years of age. She had no perception of sound until last December. At the end of five months she can hear and repeat a number of words; she can distinguish and give high and low notes very well. When standing outside of a room with doors closed, she can tell when the piano accompanies singing and when the instrument only is heard.

CASE III.—A girl, four years of age. Last October, when I saw her first, she noticed the ticking of a watch and heard the music-box and whistle. She made no attempt to repeat the sound of the voice, and could not locate noises. At the end of six months' instruction she can determine the source of sounds, and has learned people and objects have names. She can repeat readily and distinctly a number of words when spoken a short distance from her ears, as boy, sew, ball, bell, doll, and mouth. She has learned to repeat a little sentence, as "I see baby."

CASE IV.—A boy, ten years of age. When three years old, after continued practice, he could repeat a few words heard through a double speaking-tube. At five years he could distinguish about thirty words, if spoken slowly and very distinctly, but he became confused if two or more were repeated making a sentence. When nearly ten his hearing of speech had not improved to any extent, but he would turn quickly at the sound of whistles and bells. After the past seven months' careful work, he can recognize familiar words when spoken at a distance of six feet, and begins to notice what people say in the horse-car and other places. He understands and answers questions spoken some inches from his ear, and in his reading-lesson his pronunciation can be corrected through his hearing alone.

CASE V.—A girl, five years of age. When four she was considered wholly deaf. As her parents live a long distance from the city, her instruction has been carried on for a few months only at a time; enough has been gained, however, for home training to be possible. The child awoke gradually to an enjoyment of many sounds. Within fourteen months of her first lesson she has acquired quite a vocabulary, and has learned a number of sentences. She expresses herself by these words at all times, and uses the sentences properly. She has begun to answer questions, having at first merely repeated them.

It will be seen from the above that various noises are recognized and enjoyed before the human voice is noticed; the power to determine the source of these sounds grows by constant practice; words are heard for a while when spoken near the ear, their familiarity admitting of longer distance later; a memorizing of these words finally takes place; and even after they are first heard and repeated there is still a noticeable slowness, which is overcome gradually. How gradually can be appreciated by those only who have daily led the pupil step by step, against his will, through the early difficulties of learning to listen.

243 WEST TWENTY-FIRST STREET.

Badly Scared.—The Town Board of Franklin, Tenn., recently passed an ordinance forbidding the sale of watermelons in that place, and the local journal commends it for its wise precaution. It says, somewhat inconsequentially, that "the recent cholera epidemic in New York makes it incumbent on all cities and towns to exercise the utmost precautions to prevent the introduction of the germs into their borders." The town authorities had probably heard that the disease was spread through the water-supply, and they weren't going to take any risks.

COCAINISM.[1]

By J. B. MATTISON, M.D.,

MEDICAL DIRECTOR, BROOKLYN HOME FOR HABITUES.

Cocainism has been denied. Dr. William A. Hammond, speaking of cocaine before the New York Neurological Society, November 6, 1886, said "he did not believe any dose that could be taken was dangerous," and also asserted little power of that drug, except in cases of past or present addiction to alcohol or opium, to cause a "habit"—so called—a morbid condition not within the patient's power to control.

In a paper by the writer, read before the Medical Society of the County of Kings, Brooklyn, February 15, 1887, on "Cocaine Dosage and Cocaine Addiction,"[2] one case of cocainism, four deaths from single or repeated doses, and forty-six less toxic cases were cited; and, in a second paper, on "Cocaine Toxæmia," read before the American Association for the Cure of Inebriety, November 8, 1887,[3] three more lethal and seventy-three non-fatal cases were noted, more than one hundred and twenty five in all, making the most extensive *résumé* to that date presented, and impelling an editorial assertion from the *British Medical Journal*, that "if it were needful to produce more proof of the unsoundness of Dr. Hammond's statement, Dr. Mattison has effectually done this."

In a third paper, "Cocaine Poisoning," read before the New York Medico Legal Society, six more deaths and eighty more non-lethal cases were cited, making it needless to present added proof along the line of acute toxæmia from cocaine.

Regarding the other unfounded and unwarranted statement of Hammond as to the non-existence of cocainism, it has been well said that "one well attested case is worth a score of theories," and when the record of this paper is completed, detailing four cases of incipient, and thirteen cases of well-marked addiction to that drug—cocaine only, no past or present rum- or poppy-taking—leading to madness or death, it will, we think, establish a "returning board" behind which there is no going, and prove the perniciousness and danger of the opinion we have mentioned.

There is nothing on this topic in American medical literature except two excellent papers, by Morgan, of Indiana, and Zenner, of Ohio, each detailing a case. All other writers have referred to the effects of cocaine on those who were, or had been, alcohol- or opium-users. While cases of this mixed addiction have been frequent, now, happily, decreasing, those of cocaine only have been rare, and becoming more so; yet enough to show, beyond question, another danger from a drug that, along certain lines, stands peerless and alone.

Koller told the world what marvellous power cocaine has as a local anæsthetic—a blessing unique, and one worthy his lasting honor.

From beyond the sea came, too, a story of this drug which brought in its train degradation, despair, and death, for it was the ill-starred zeal of an Austrian enthusiast, Fleischiel, who, in his wild extravagance, declared that "with cocaine in the treatment of alcohol and opium addiction, inebriate asylums would be a thing of the past" a statement—not only untrue, but one which, going the rounds of the press at home and abroad, brought wreck and ruin to more than the world will ever know, and most of them, alas, members of our own guild.

And why? Because many an unfortunate who had gone down before the power of alcohol or opium built high hopes on this hapless assertion, and resorting to cocaine for relief, not only failed in that laudable endeavor, but added a new link to the chain of his addiction, compared with which the strength of the others was weak.

To best compass this subject let me offer you what clinical study has given us touching cocainism, its cause, consequence, and cure. Getting at once to the genesis of this disease, for such it is, we find that, like most cases of its less deadly congeners, opium and chloral, first given for relief of ill-health, body or mind, and persisted in, perhaps beyond legitimate need, it creates a demand for continued taking that will not be denied. Of the cases we shall offer, all began under conditions as cited; the only exception, if such it be, for it seems one form of mental ill-health, being that of the patient who used it to strengthen brain-power

While some cases, doubtless, though, perhaps, not so recorded, have had their rise in the morbid desire of erratic neurotics to test the effect of new drugs, coupled with the baneful outcome of mistaken teachings as to acute and chronic cocaine-taking, to which we have alluded, and, like the glamour of De Quincey's writings, which, beyond question, have lured men and women to destruction, that have doubtless impelled more than one, relying on these untrustworthy guides, to resort to its use.

The first recorded fatal case from acute cocaine-poisoning was largely due to the hapless surgeon's reliance on the asserted use by others of large doses without ill-effect. How many less lethal—may be—cases having a like origin? How many, all unrecorded, both acute and chronic, may be traced to the false teachings of Hammond and Bosworth, teachings so inimical to the welfare of person and public?

That is a query more easily asked than answered, but one which may well make us pause and ponder. Safe it is to say, in the light of past evidence and of present facts, it behooves every well-wisher of his kind to stamp out such dangerous doctrine with every clinical proof at command.

Shrady: "To some persons nothing is more fascinating than indulgence in cocaine. It relieves the sense of exhaustion, dispels mental depression, and produces a sense of exhilaration and well being. The after-effects are at first slight, almost imperceptible, but continual indulgence finally creates a craving which must be satisfied; the individual becomes nervous, tremulous, sleepless, without appetite, and is at last reduced to a condition of pitiable neurasthenia."

Shaw: "Once a man flies to cocaine for relief from 'cares that annoy,' he generally continues with such rapid strides toward such complete subjugation to its bewitching thraldom as but few will ever be rescued from by any power of will which they may be able to bring to their aid."

Everts: "It is a fascinating and dangerous intoxicant, the effects of which may be more difficult to counteract and renounce than are those of opium or its derivatives."

Hughes: "It is a remedy to be used with extreme caution and prudence internally, and the large doses reported as having been given are not ordinarily safe. It will bear watching. It crazes and kills quicker than opium. The possibilities for immediate harm are not only great, but the likelihood of remote damage when tolerance is established is not small. The cocaine disease, more pernicious than the morphine neurosis, is the certain entailment of its frequent administration, and its thraldom is far more tyrannical than the slavery of opium."

Clark: "This case," cited later, "has furnished me such positive proof of a lurking danger in the use of cocaine that all the negative evidence or hypothetical assumptions published or adduced cannot have the least impression in causing me to relax for an instant the most rigid supervision of every patient to whom I in any manner administer or apply the drug."

Zenner: "Cocaine, even to a greater degree than alcohol or morphine, weakens the will and produces character degeneration."

Ring: "I would not be willing to take the responsibility of a like continuance"—case noted—"with any patient; neither would I put it in the hands of one to be

[1] Read before the District of Columbia Medical Society, Washington, December 24, 1890.

[2] The Lancet, London, May 23, 1887.

[3] La Tribune Medicale, Paris, January 1, 1888.

used at his discretion. Take a man who is ill, downhearted, unable to work, and subject him to my experience, and what would become of him? Would he not be in imminent danger of becoming a cocaine *habitué*?"

Clouston: "In cocainism the craving is, perhaps, greater than for any other stimulant or narcotic whatever, and it is the most absolute destroyer of inhibition and the moral sense that we yet know."

Morgan: "Cocainism is the worst of all known drug diseases, and the most rapid in its action."

Mattison: "I think it, for many, the most fascinating and seductive, dangerous and destructive, drug extant. It may be toxic, sometimes deadly. It may produce a diseased condition—in which the will is prostrate and the patient powerless—a true toxic neurosis, more marked and less hopeful than that from alcohol or opium."

The most ensnaring way of taking cocaine—or any narcotic—is subcutaneously, and this is the usual form of chronic using. We have, however, the record of cases where its inception was by mouth, as a stimulant, as an external application to subdue the pain caused by eruptions, as a local anæsthetic, or as a nasal spray. This phase of the subject is soon disposed of; most cases have had their origin in a legitimate use of the drug, thus proving, with fullest force, the paramount importance of personal professional care to insure complete quitting when the proper need is ended.

We now enter upon another phase that is appalling, for of all drug-wreckers of mind and body cocaine leads the list. Taken hypodermically its effects are transient, and coupled with a fascination peculiar to itself; some *habitués* get to taking it very often—repeating the dose every fifteen or twenty minutes, for hours. This rapidly reaches a large aggregate—sometimes sixty grains a day—and easily explains the havoc that soon ensues. Its destructive energy is unique. For swiftly pernicious, profoundly perturbing effect on functional well-being, it has no equal, and as an acute killer of moral sense it stands alone. Well has it been styled "the devil's own drug;" well has it been said, "he must gloat with special delight to see a poor wretch tampering with cocaine;" and truly has Erlenmeyer, Germany's highest authority along this line, written: "He who has seen the sudden, lightning-like, mental, moral, and physical destruction of one who has given himself up to cocaine, will let every optimism array itself against it."

The diagnosis in well marked cases is not difficult. In some the cause is patent; in others, especially morphia cocainists, if concealed, a consensus of peculiar psychical and physical symptoms, confirmed by a few hours' vigil, and made complete by finding cocaine in the urine, prove the disease beyond dispute.

To tell, most tersely, the sequences of chronic cocaine-taking, we shall note its effects in detail.

Digestion.—In the larger number of cases the earliest ill results refer to this function. Of all drug destructives cocaine is the most absolute anorexic known. Fully under its influence all desire for food is lost—patients going for days without a morsel. As might be expected, this failure in supply does damage along nutrient lines, and coupled with its direct pernicious effect on glandular activity brings about emaciation more quickly and in larger degree than any other known drug. Thirst, too, is in abeyance, but both may return when the toxic effect is lessened or suspended.

The buccal cavity, in some, becomes dry and tender, the pharyngeal muscles painful, deglutition difficult, and the gums, tongue, and throat take on a peculiar reddish hue. Other signs of gastric disorder may present—odorous breath, coated tongue, eructations, and painful digestion. In the bowel it induces torpor—no action for days, and then only by superactive purgation—or forceful, spasmodic action, with fæces hard and dry.

Respiration.—Vaso-motor defects in the system are hurried, depressed breathing, and dyspnœa—especially on effort—due, in part, to direct effect and partly to impaired general tone.

Circulation.—Much more marked is the toxic action on the heart, and it is always the first effect of a full injection. The pulse quickly rises to 100, 120, or even 130, remaining so a half hour or more, and then, through one or two hours, gradually reaching normal, unless requickened by a new supply. It has been known to remain 100 to 120 for months together. It may continue regular, but becomes fuller and rapidly quickened by effort. All this from vaso-motor paralysis, and this circulating condition is a source of constant danger, for an overdose may speedily prove fatal from heart palsy; and another point worth knowing, as Erlenmeyer has stated, this continued vascular relaxation makes extra-hazardous chloroform anæsthesia in cocaine *habitués*.

Liver.—Fully jaundiced, or a pasty or yellowish-white color evidences the hepatic derangement; sometimes bronzed—Addison's disease like. A peculiar cadaveric complexion, better appreciated when seen than from any description, sometimes presents.

Kidneys.—Increased action at first; later largely diminished. Sugar and albumin may be present; oxaluria; specific gravity high. On the bladder a semi-paralysis of the muscular coat, as in morphinism.

Skin.—Irritation or inflammation from the hypodermic-taking is rare. The immediate circle of the injected part is partially anæsthetized, and this may be, in part, protective against a common sequel of morphia-injecting. Later, boils, due to the general dyscrasia, may appear. The vaso-motor relaxation before noted obtains here, and sweating, profuse and prolonged, especially on exertion or excitement, is noted. Cold, clammy, limb perspiration, with body burning, or skin dry, cracked, and pallid, may ensue, and temperature may be depressed.

Sexual.—Cocaine, like opium, may first stimulate this function, but excess soon brings the effect of over-goading, and, sooner than with the poppy salt, comes loss of desire and power, and impotence complete. This, purely functional, is quickly and fully recovered from on quitting the cause.

Nutrition.—Next to the nervous system and brain, this is the field in which cocaine does its wickedest work. No other drug equals its tissue-wrecking power, emaciation from continuous use being constant and decided, sometimes extreme. Two factors do this. First, the effect of the drug in abolishing all food desire cuts off the needed nutrient supply. Added to this is its pernicious result on glandular action, which, enormously increased by its stimulating effect, not only disposes of all nutrient material ingested, but as that—being so far below normal, as has been noted—is insufficient, the body tissues are levied on to correct the accelerated metabolism and consequent defect. To a minor extent this defect is observed from single or limited doses, for they will cause salivation, lymphatic swellings, and even swelling and hardening of the mammary gland; but, largely and steadily taken, this ill result is greatly intensified, and makes one of the most marked and disastrous sequelæ of excess. According to Maerkel, on this vastly increased cell-action depends the stimulant effect; "but exactly in this accelerated metabolism lies concealed the same danger, perhaps even a greater, as in every other extravagance in the organism, constructed and operated on principles of the greatest economy. From temporary use of the drug injurious effects on the organism are little to be feared, because the waste of nutrient material can, in great measure, be replaced; but when the drug is habitually used, it is very improbable that the supply of nutrient material carried to the glands is sufficient to correct the defect caused by their increased action. To confirm this view we have the fact that, in South America, persons who use coca die mostly of phthisis, which is brought on partly by lymph stream disorder and metabolism, and in part by premature wearing out and consumption of parenchymatous cells of the lymph-making tissues."

Nervous System.—As might well be expected, here is the second largest field for destructive work of this drug. This, like its action on nutrition and the brain, is largely due to its peculiarly fleeting effect, and which compels such frequent—more largely than any other narcotic growing by what it feeds on—increased taking. Many opium *habitués* maintain a fair avoirdupois and nerve status for quite a time. So may chloral-takers, but not so with cocaine. It ravages along all nervous lines, and so, leading up to the higher brain centres, stamps its ruinous power unique. At first merely over-activity; then the reaction and wreck sequelling hyperstimulation; soon comes the signs, known in part to you all, of typical wretched neurasthenia, all the more wretched by the consciousness of the miserable victim that he is daily adding to his anguish by the pressure of a power he is helpless to resist. Among these symptoms, with some, is a peculiar unrest—almost constant movement—which becomes in marked cases such as we have never noted in poppy or chloral *habitués*. Soon insomnia, absolute and intense, ensues. Nights and days together patients go without sleep, and when it does come, it is often robbed of its restfulness by horrid dreams.

Fugitive pains—sometimes shock like in the limbs—not so distinct, decided, and localized as in chloralism, occur. All the special senses become affected. Sight: Brilliant eyeballs, dilated pupils, light intolerance, object distortion, and hallucinations. One patient now under treatment had not been in her room a day before she had rearranged the furniture to keep out a new-found "Peeping Tom." Touch: Over-sensitive; hot and cold chasing; air-draughts, like a storm-blow; bugs and reptiles race each other; and there "the touch of a vanished hand." Hearing: Over-acute and hallucinatory—"the sound of a voice that is still." Taste and smell are impaired, blunted, distorted, hallucinated.

In this connection may be mentioned one symptom which we have never noted in any drug *habituê* other than cocaine, and which Heinemann thinks due to the action of that drug on the skin, though we regard it from morbid brain action. It is the patient's idea of some substance—worm, or glass, or splinter, or drug—under the skin; notably the finger-tips, for which they'll dig with knife or needle till the parts are raw. Magnan cites such cases. One always scraping his tongue and thought he was extracting little black worms. Another made his skin raw trying to extract cholera microbes, while another was constantly looking for cocaine crystals under his cuticle. One patient, a physician, now under my care, declared his microscope disclosed a parasite; and his wife had in lesser degree the same delusion. This symptom seems *sui generis*, and presenting so often affords added proof in suspected cocaine-taking, and illusions and hallucinations run riot, and, added to varied varying delusions, soon make the cocainist a fit subject for a mad-house.

While the ravages of cocaine along somatic lines excite surprise and alarm, one stands still more appalled at its ruinous "lightning-like" effect on the higher brain-centres—ideation, intellection, and the moral. Here it has no peer. Here it proves itself "the most powerful and devilish drug which it has been the misfortune of man to abuse." Here it shows itself unique for "debasing enslavement" of volition, and for "diabolical and indescribable general demoralization." Toxic brain effects appear soon in some cases; as a rule, not till the doses are large, or the taking excessive. Among the earliest are hallucinations of most, or all, the senses to which we have alluded. These illusions and delusions, sometimes illusions first are added to and intensified by the others. Take this triple deliriant factor, and little wonder the cocaine lunatic finds himself compassed by a legion of horrors that drive him to distraction. These are realized ofttimes by the patient as being mythical and absurd, yet he is hopeless to control them. He may discuss things intelligently, yet cannot be convinced of his vagaries.

The most prominent hallucinations relate to hearing; the most important—regarding diagnosis—to touch. All—illusions, delusions, and hallucinations—in marked cases are mainly of persecution. Here, again, is a point of diagnostic import. In other drug manias—morphia and chloral—impulses to kill are largely suicidal. Not so cocaine, but homicidal, distinctly, and almost without exception. These rise from two causes—one fear, horrible, ever-present fear, either of an avenging pursuer, the outcome of a previous delusion as to some criminal act, or to escape persecution; to resent proposed restraint, or revenge some fancied grievance. This impulse to kill seldom leads to assault unarmed; but making himself a sort of walking arsenal the frenzied cocainist, without purpose to harm any special person, may rush through house or street, firing, regardless of result. Of course this delusion will likely be more special and deadly in one of normal revengeful spirit.

The aural hallucinations cause more unrest and distress than the visual, and the unseen enemies or burglars may lead to reckless shooting. A case of that kind is now under my care. No ill-will; no sense of persecution; no avenging desire, but a fancied burglar—an active fusilade and badly damaged surroundings. Saury is right in speaking of a special delirium—essentially hallucinatory—due to cocaine. Disturbance of ideas is not primary; it confines itself constantly to sensorial troubles. All the senses may be affected, but in unequal degree. Disorders of general sensibility are markedly prominent; then come hallucinations of sight, then hearing, smell, and taste, all of which may be varied and painful.

Ideation and intellection become weak and distorted. Visionary schemes, absurd business ventures, and wasteful extravagances may obtain. Another special feature—especially in physicians—is sometimes marked even in incipient cases, as will be noted later: a peculiar mania as to the panaceal powers of cocaine—a universal balm, lauded loudly for the most varied diseases. So striking is this in some cases that it may sway the diagnostic balance in suspected cocaine-taking.

Under the lashing effect of this drug ideas are evolved rapidly, and find expression in surprising volubility. The loquacity is sometimes extreme, and if noted after a supposed cocaine-quitting may well excite distrust. Especially common, too, as Erlenmeyer has said, is a certain prolixity in conversation and correspondence, which, when united with a weakened memory, may lead to the greatest embarrassment and confusion. General listlessness and inaptitude for brain-work are notable. The brain spur soon expends itself on doggerel verse or trashy prose.

On the *morale* the results are deplorable. The *personale* of some cocainists is greatly changed. One cleanly, tidy, almost Brummell like, becomes dirty, careless, unkempt to a degree. The nastiest patient under my care was a cocaine *habituê*.

Of more import is the change in higher attributes. Lying—more than with opium—selfishness, and malicious intent, if the drug be debarred. The claims of friendship and affection are disregarded; family ties, the care of children, social and domestic duties, are neglected, while religious duty and the authority of ritual superiors are ignored and denied.

After this recital, gentlemen, you may think me an alarmist, a pessimist. Yes, truly so, everlastingly so as regards cocainism, speaking whereof I know, and quite agreeing with Erlenmeyer, who wrote of it: "It is a sorrowful picture I have drawn, but I fear that I have not selected colors dark enough." The prognosis of cocainism is bad. The prospect of lasting cure, except under prolonged treatment, is not good. Acute recovery can usually be assured and secured; but the risk of recurrence is large—more so than any other toxic neurosis, save, perhaps, morphine-cocaine addiction.

Treatment.—In recent cases the drug can be quit at

once, and the resultant reflex irritation met with phenacetine, ten to twenty-grain doses, to control pain and unrest, and chloralamid, thirty to sixty grains, to secure sleep. Should more potent remedies be needed, one to two-grain doses of codein subcutaneously. As an anodyne, paraldehyde, thirty to one hundred and twenty minims, in capsule or elixir, or sulphonal, twenty to forty grains, with or without hydrobromate of hyoscin, one one-hundredth to one-twentieth grain as a soporific. Later, galvanic and faradic *séances*, with internal tonics and favoring conditions for several months are required.

In marked cases more robust measures are essential. If the body well-being be not greatly impaired—otherwise a tonic course should precede rapid reduction—six to ten days, coupled with a minor degree of preliminary sedation after the writer's method, "The Treatment of the Morphine Disease," can be used. As a partial substitute for the cocaine, caffein-sodii benzoas, one to five grains hypodermically, will be found of value, and for the pain and unrest, as well as insomnia, phosphate of codein in full doses, two to three grains subcutaneously, or double by mouth, will prove effective. If needed, narcein will add to the codeine effect. Morphine should not be used. Alcohol should be withheld unless imperative. If so, it may be given as alcohol—not brandy or whiskey—and always with milk or other food, or hypodermically. The risk, in treating these cases, of causing a new form of drug addiction should never be forgotten.

After the acute effects of quitting have subsided, the same indications for treatment will present as after morphine-ending, to be filled along like lines in the same way as detailed in the writer's paper before mentioned.

In some cases, more so than in the morphine disease, restraint will be needed. For reasons stated this should be as mild and brief as is consistent with the welfare of the patient, the object being to re-educate and restore the depressed will-power, and this can be done in some cases by mildly coercive measures rather than the reverse. With others, however, absolute and prolonged restraint is imperative. The importance of a protracted roborant *régime*, varied and constant, with freedom from work and worry, obtains more largely in this and morphine cocainism, than any other drug disease. The peculiar, overmastering fascination of cocaine, its strong, almost resistless, tendency to retaking in the early weeks or months of abstinence make this essential. In marked cases six to twelve months, or even longer, must be taken in which, if at all, to get thoroughly well. The importance of prolonged hygienic care and favorable surroundings, after active medical treatment is ended, in these cases, cannot be overestimated, and *they are absolutely essential* to effect a lasting cure.

THE CHINESE AND THEIR PECULIAR MEDICAL IDEAS.

By I. E. COHN, M.D.,

PORTLAND, ORE.

LATE SUPERINTENDING SURGEON NORTHERN PACIFIC RAILROAD.

My former position as chief surgeon of various railroad companies on this coast has thrown me in contact with a people rarely met with by the general practitioner, namely, the Chinese. It is very rare that they employ other than their own people to administer to their wants. During the construction of the Northern Pacific Railroad and the Oregon Railway and Navigation Company so many accidents and diseases broke out in their camps that they had to rely on the services of the companies' medical staff, and by degrees we got an insight into their medical customs, for surely it cannot be called a "science." That they have their own medical schools and a rigid method of examination and studies is told us by the best authorities who have travelled in that still, to us, unknown and uncomprehended land. There may be some men educated in medicine, according to their ideas of education, but they are rare in this country. A well-versed Chinaman told me that the "Chinese doctors" of this country are what we term "quacks," and knew nothing, and not one of them had ever passed an examination in their own country. Having therefore their own physicians they consequently maintain their own drug stores and Materia Medica. Some of these "Chinese doctors" advertise quite extensively in our daily papers to cure all diseases human flesh is heir to, and to the shame of our own people, be it said, they will consult and conscientiously take treatment at the hands of these "necromancers." These men have absolutely no anatomical knowledge, and therefore as a necessary consequence know nothing of pathology. They claim the body has two separate and distinct hearts, five livers distributed throughout the various parts of the abdomen; that there are five sets of intestines, and that all is presided over or regulated by seven emotions.

Their Materia Medica is composed wholly of vegetable and animal matter; the most of it imported into this country coming in roots, or if prepared in China, in wax-balls. The vegetable kingdom contributes most freely, and makes up the greater bulk of their drugs. As examples of the curative agents taken from the animal kingdom I will only mention a few, such as dried powdered hides of rattlesnakes, ox and dog gall, dried shrimps, scales of certain fishes, and dried blood of various animals, among them the rat. This is a positive assertion, and should not be taken *cum grano salis*. Their mode of administering medicines is either in a tea, a plaster, or, in case these wax-covered boluses are prescribed, the cover is broken and the contents swallowed. In examining their patients they always examine the radials of both arms. They claim, as stated, that there are two hearts, separate and distinct from each other, in the body, so take the beat of each; but this is more probably an archæological procedure based upon the old doctrine of "digitus cordis" and "digitus medicus," which might very easily have been brought to China from the Alexandrian school

They ask for no symptoms, not even a question regarding your pains or aches, and surround themselves with mysticisms of all kinds. Their conclusions are always the same: "Take my tea and you get well." An ill-smelling package of finely chopped up stuff is handed you to brew into a tea. One of the oiliest impostors of this class was the late Dr. Lai Po Tai, of San Francisco, who died a millionaire, his fortune having been made by working on the credulity of the California public. Nor was this patronage confined to the ignorant, for his carriage could be seen daily in front of the mansions of the rich, on "Nob Hill."

The knowledge of surgery of these men is, to say the least, crude. No matter what the ailment or condition, a plaster of some kind is put on. I have never known of an instance of their using the knife. It was my good fortune once to be present at the dressing of a fractured leg. They placed a peculiar kind of clay into a wooden bowl, brought in a lot of chickens, and, with incantations, severed their heads and allowed the blood to flow on the clay, which was mixed therewith. This was applied direct to the fractured limb without any attempt at reduction. Bandages were then applied, and finally small bamboo strips entwined in the bandage, enveloping the whole as if in a wicker basket. Another chicken was confined under the last turn of the bandage, and the head severed and the blood allowed to soak through the bandages. After this the bird was removed and the leg dressed in the most approved Chinese fashion.

As a stoical race they beat the Indian. You can cut them all to pieces, and they will lie perfectly still and not a groan will escape them. I have repeatedly operated on them without the use of an anæsthetic, having had the administration refused. I remember a case in particular where I deeply invaded and laid open the cervical region to remove a large tumor. In an accident on the Northern Pacific Railroad, where quite a large number

of limbs had to be amputated, we had quite a struggle to administer chloroform, and some had limbs amputated without it on account of their stubborn refusal, but in never an instance was an outcry made. It actually seemed superhuman.

They have a "god" for every emergency, and only value life on the basis of what there is in it, and are fearless of death, which has for them no terrors. This explains the fact that people living among them rarely, if ever, see a maimed or crippled Chinaman. In the railroad accident before referred to the number who had to submit to amputation of limbs was seventeen, and not one of them survived. They commenced to die at a period of convalescence when about to be discharged from the hospital. In the case of the first death no notice was taken of it, and no suspicions aroused. The next morning more followed in the same mysterious manner, and I concluded to solve the matter. With Drs. Davie and McMahon I made post-mortem examinations and found invariably evidences of opium-poisoning. I ordered the wards searched high and low, and placed guards over them, but all to no purpose, every one of them died in the same manner. Opium was smuggled in to them in spite of the closest watch. Some time thereafter, in conversation with a leading Chinese contractor, I expressed my indignation, but was coldly informed that they were better off dead than alive; that they were no longer able to work and care for themselves, but would become a burden to themselves and friends; that death was far preferable, and that they had demanded the drug to put an end to the miserable existence which stared them in the face on leaving the hospital. I have since had similar pleasant experiences with them.

In this connection I wish to say a few words on the speedy healing of wounds on these people, and which must be due to their diet and habits of bodily cleanliness. From early youth they are constantly in the water, and you find the lowliest washing their bodies twice a day. Their diet is mostly vegetable, in which rice and tea form the foundation, to which are added green vegetables, as young turnip-tops, spinach, kale, or similar garden truck. Very occasionally they add to this oysters, fish, pork, and fowl, principally chickens or ducks. Beef, mutton, and veal they use in no way. Possibly this may explain the quick healing power, which is marvellous. The tissues of their bodies cut differently, that is, they feel differently under the knife, than in the Caucasian subject. They are more dense and elastic, and not so flabby.

The peculiarities of this race extend to the lying-in-room. The patient will not allow herself to be placed in a recumbent position during labor, but insists upon sitting on the edge of a chair, or between two chairs, and maintains that position until labor is complete. The cord must be cut with a piece of glass or broken china, a new cup being generally sacrificed for this purpose. The tying of the cord is also peculiar. You will be allowed to tie it as close to the body as you may desire, but you must leave at least three inches beyond the ligature. The after-birth is invariably burned, and the patient is placed in bed a few hours, her buttocks resting in a plate or pan filled with ashes, so that every discharge may run into and mingle with the ashes. This is also thrown into the fire. They resist vaginal douches or any interference, and it is a hard matter to get consent to make an examination.

They believe they can diagnose the stage or progress of labor by the condition of the pulsation of the middle finger of the right hand. As labor progresses they hold the pulsation increases, and just before the delivery of the head it is felt tumultuously in the ball of the finger, but ceases with delivery. They use no bandage, and if you call the next day you will find your patient (belonging to the better class) up, dressed, and entertaining her friends, just as if nothing strange or out of the usual course had happened. I have never known or heard of any serious complications in Chinese lying-in chambers. The child is invariably nursed by the mother, who always has a sufficiency of nourishment for it. If in case of a female infant you should call and find it had mysteriously disappeared, as often happens, especially when the family is large, you can form your own conclusions. That female babies are got away with in China among Coolies is well known, and this practice has also been imported to this country. Under the present restriction laws regarding Chinese immigration these female babies will hereafter most likely be considered the most desirable property, and whereas until now they were considered a drug on the market, they may become, in America at least, a source of anxious solicitude and desire, since the possession of one of them will enrich the family.

In conclusion, I would say a few words regarding the Chinese Materia Medica. I do not wish to be understood as denying the possibility of their possessing many remedial agents that may be of value, in fact we know better. We have gathered from all nations more or less, and it is not improbable that we could derive from them some very important knowledge and valuable remedies, which to us are totally unknown. A strict investigation into the physiological and therapeutical action of some of their remedies might be of great value, and would surely be of much interest to the civilized world.

Progress of Medical Science.

Vaccination for Hog-Cholera. — Dr. Metchnikoff draws the following conclusions from his investigation into the immunity of rabbits vaccinated against the microbe of hog-cholera: 1. The serum of rabbits vaccinated against hog-cholera does not show any bactericide or antitoxic properties. 2. This same serum does not possess the power of attenuating the virulence of the microbe of hog-cholera. 3. In spite of the absence of these three properties, the serum of vaccinated rabbits protects other rabbits from fatal infection with the bacteria of hog-cholera. 4. This preventive property is not found in the fluid obtained from œdema caused by arrest of circulation. 5. The bactericidal properties in vaccinated rabbits reside in the phagocytes. 6. The pus of vaccinated rabbits retains virulent microbes for a long period. 7. The organism of vaccinated rabbits is very sensitive to the toxines of hog-cholera and presents no antitoxic properties. 8. The phagocytes play a very important rôle in the resistance of vaccinated rabbits. 9. They play an equally important rôle in the resistance of non-vaccinated rabbits which have been treated with the preventive serum. It is probable that this liquid exercises, under these conditions, a stimulating effect upon the phagocytes.— *Annales de l'Institut Pasteur*, May 25, 1892.

Antimony in Skin Diseases.—Drs. Jamieson and Douglas (*Edinburgh Medical Journal*, June, 1892), after some investigations and the cure of a case of psoriasis inveterata and one of dermatitis exfoliativa, arrive at the following conclusions: 1. Antimony lowers temperature in some conditions of the skin associated with hyperæmia and dryness of the surface. 2. Its influence on tissue waste, as estimated by urea and urine excreted, is not, under the circumstances detailed, a noticeable one. 3. It softens the skin, augments insensible perspiration, improves the nutrition of the integuments, diminishes hyperæmia, and lessens the tendency to premature and excessive epidermic exfoliation. 4. While advantageous in the congestive stage of acute eczema, it is contra-indicated in Brocq's second stage; it may again prove serviceable in the stage of successive desquamations. 5. It is likely to be of use in cases where there is a functional nervous cause; it may prove of value in diffuse scleroderma, and possibly in myxœdema. 6. As compared with arsenic, authors are pretty generally agreed that the latter is valueless in conditions of the pityriasis rubra type. 7. Arsenic restrains

the tendency to form bullæ in dermatitis herpetiformis and pemphigus, and sometimes cures psoriasis, but may apparently convert a psoriasis into a pityriasis rubra. 8. Arsenic in some cases renders the skin muddy, dull, and earthy, and it may give rise to keratosis, which again may pass on to epithelioma. Such results have not so far followed the administration of antimony. 9. The action of antimony may be contrasted with that of pilocarpine. Pilocarpine produces a copious perspiration for a brief period, while antimony bathes the epidermic cells continuously in a gentle moisture.

Variola, Varioloid, and Varicella.—In the *Jahrbuch fur Kinderheilkunde*, 1892, page 427, there is a survey of these three conditions. Biedert finds that there is one form of varicella in which marked constitutional disturbances exist, not only in little children, but in those approaching adolescence. Sometimes it occurs in adult life. This severe varicella is with difficulty distinguished from varioloid, especially varioloid that has been mitigated by previous vaccination. In variola the period of contagion begins after the period of eruption. Immunity conferred by vaccination has a variable duration, sometimes seven years, sometimes longer. It may cease in one or two years. Immunity begins a week after vaccination.

Physiological Action of Massage upon Human Muscle.—In the *Archives italiennes de Biologie*, 1891–92, page 225, Maggiore's experiments with Mosso's ergograph lead him to the following conclusions: 1. Massage applied to a muscle at rest increases its resistance to fatigue, and modifies and delays fatigue proper. 2. In certain cases the good effects of massage are in proportion to the length of time that it is given. 3. Massage prevents in muscles the accumulation of fatigue-products due to work that is too closely consecutive. 4. Percussion and rubbing are inferior to kneading and to mixed massage; that is, to the alternate application of these three methods. 5. In muscles weakened by fasting, massage increases resistance to the effects of work. 6. Upon muscles fatigued or weakened by general causes, as forced marching, watching, brain-work, massage exercises a restorative action. 7. Massage has no good effect whatever upon muscles in which the circulation of the blood is suppressed.

Rachitis.—One of the books of this year is Comby's study of rachitis, a disease that has not been revolutionized by the microbian doctrine, that is to-day the same entity as it was yesterday, and will, in all probability, remain the same forever. In the author's opinion all cases of genu valgum, unilateral or bilateral, are due to rachitis. Hereditary syphilis as a cause of rachitis Comby rejects utterly, believing only that it may influence digestion unfavorably. The chief factor in the production of rachitis is improper food. This results in dyspepsia and dilatation of the stomach. Even when the constitutional trouble is cured, this dyspepsia often remains. All rachitics in adult life are dyspeptics. Treatment consists of plain or phosphated cod-liver oil, preparations of phosphorus, sea-baths or salt-baths, and strict hygiene. Most cases recover.

Troubles of Salivary Secretion in Mumps.—Simon, in the *Revue générale de Clinique et de Thérapeutique*, 1892, No. 15, calls attention to the fact that during recovery from mumps there is frequently profuse salivation, sometimes so exaggerated as to constitute a true complication that may last several months. The saliva secreted is thicker than normal. Neuter sulphate of atropine is the drug best adapted to relieve this condition.

Neoplasms of the Vagina.—In the *Centr. f. Gyn.*, 1891, No. 41, Strassmann reports two cases of tumor of the vagina, a condition comparatively rare. Neugebauer has collected thirty-five cases; Kleinwächter, fifty-three; and Breisky, in 1886, five more. Strassmann's first case occurred in a woman, forty-one years old, married, sterile, and suffering great pain due to small tumors the size of a bean in the recto-vaginal cul-de-sac. Removal and microscopic examination of these small tumors showed them to be calcified fibromata. In the second patient, a woman, thirty-four years old, a tumor as large as a hen's egg was found in the anterior portion of the vagina, implanted upon an extensive base. This proved to be a soft fibroma, rich in blood-vessels and lymphatics.

Objective Signs of Neurasthenia.—In the *Munch. med. Woch.*, 1891, Nos. 50, 51, 52, Loewenfeld advises that all cases of neurasthenia be examined for the following signs: General nutrition remains unimpaired unless there is dyspepsia. The skin of the face and chest reddens at the least emotion, the ear and cheek sometimes being deeply injected. Narrowing of the visual field is exceptional. There is excessive mobility of the pupils, that grow smaller and larger not only on account of ordinary physiological excitation, but from psychic impressions as well. Inequality of the pupils, occasionally present, is transitory. Muscular phenomena are complex. There is inability to close the lids completely, weakness of movement in convergence, motor insufficiency in hands and arms, and fibrillary twitchings. Reflexes are often exaggerated. Loss of knee-jerk is not a symptom of pure neurasthenia. Nervous excitability is exaggerated, especially that of the optic nerve. Troubles with the voice, speech, and writing, are due to lessened resistance of the muscles to fatigue. The heart-beats are either increased or diminished. Vascular tone is lessened, and the arteries are lengthened in serpentine form. The motor force of the stomach is diminished, and there is more or less hyperacidity. Eructations, constipation, and nervous diarrhœa complete the dyspeptic symptoms. General hyperidrosis is common, though sweating may be confined to the hands and feet, or to the head during sleep. The urine nearly always undergoes some change. There may be mucus in it; polyuria, phosphaturia, or oxaluria may exist.

Primitive Splenomegaly.—According to Bruhl, in the *Archives Générales de Médecine*, June, 1892, primitive enlargement of the spleen is a variety of pseudo-leucæmia. It is characterized by this special enlargement, by diminution of the red blood-corpuscles without increase of leucocytes, and absence of glandular swellings. There is nearly always some enlargement of the liver. Anatomically, the essential lesion is splenomegaly. Histologically, the glomeruli Malpighii show marked alteration, being scarcely recognizable.

Troubles of Dentition.—In the *France Médicale*, August 19, 1892, there is reference to Gibert's recent paper upon the foregoing subject, which embraces an analysis of observations made upon one thousand children artificially fed, and upon five hundred infants naturally nourished. The author concludes that children brought up on the breast are almost entirely free from diseases attributed to dentition, only two of the five hundred showing any such abnormity. But among the other one thousand there were 58 cases of simple stomatitis, 113 of ulcero-membranous stomatitis, and 28 cases of convulsions. Dentition is never perfectly accomplished without the act of sucking the maternal nipple, which favors the physiological waste of the gums. There is no such thing as diarrhœa due to dentition.

Cocaine in Tinnitus Aurium Due to Middle-ear Disease.—In *Siglo medico y Rev. laryngol.*, 1892, No. 14, Carralero advocates injections of a four per cent. solution of cocaine into the Eustachian tube. This brings about excellent results, especially when hyperæmia and catarrh of the tympanum are present, together with congestion of the labyrinth, hyperæsthesia of the middle and external ear, or proliferous inflammation. These injections are used every day at first, then every two or three days, by means of Itard's sound.

Infectious Erythema in Diphtheria.—Mussey's *These de Paris*, 1892, treats of this subject. There are several kinds of erythema more or less constantly present in diphtheria—the polymorphous, the rubeolic, the scarlatinoid, and the desquamative scarlatiniform. Often these are transitory. Some are difficult to recognize, as purpuric erythema. Such eruptions are of graver import in regard to prognosis when occurring late in the disease.

Respiratory Prodromata of Typhoid Fever.—In the *Révue laryngol.*, 1892, No. 14, Boyer states that sometimes the earliest manifestations of typhoid fever are in the respiratory tract toward the end of the first week, consisting in catarrhal inflammation of the throat and nose that may also implicate the Eustachian tube and the middle ear. Oval or circular ulcers, superficial and without exudate, are found in the respiratory passages. They are similar to the intestinal lesions, and contain Erberth's bacillus. Not of much importance in themselves, these ulcers are of moment in differential diagnosis and prognosis. According to Miller, they indicate grave conditions. A case is cited in which acute laryngo-pharyngitis appeared simultaneously with the intestinal lesions of typhoid, resulting in death in forty-four days.

Results of Gonorrhœal Infection in Women.—Von Rosthorn, in the *Präger Medicin. Wochenschrift*, 1892, states that the prognosis of gonorrhœal infection is favorable as long as the poisonous process does not invade the cervix. When this happens, rapid extension of the inflammation results, an "ascending gonorrhœa" causing marked changes in the genital tract and surrounding tissues, with special preference for the endometrium and tubes. The dependent portion of the pelvic peritoneum also becomes involved. There may be latent gonorrhœa that is without acute stage, and insidious in its development. Later, this may become an ascending gonorrhœa with its adverse consequences. It is possible to cure the infectious disease itself, but uterine catarrh and adhesions remain, starting up morbid processes at each menstrual epoch. In regard to accidents connected with the puerperal state, the author does not consider gonorrhœa as important a factor as Saegener does. In the acute stage applications of tannin and iodoform to the vaginal mucous membrane are recommended, and injections of bichloride of mercury, one part to one thousand. Cauterizations of the cervix with fuming nitric acid can also be employed, but intra-uterine medication is to be avoided. In the later stage of infiltrations, adhesions, and cicatrixes that cause pain, massage according to the Thure-Brandt method is of great value, together with the intra-uterine galvano-caustic. Observations based upon one hundred cases lead to the belief that removal of the tubes will always result in almost permanent freedom from pain. These cases have to be watched constantly after the operation, to insure the prophylaxis of ascending gonorrhœa.

Angiokeratoma.—Pringle, in *Monatsh. für prakt. Dermatol.*, xiii., 11 and 12, describes this dermatosis. It consists of small vascular tumors of which the epidermis is much thinned. These vascular tumors occur in the back of the hands and feet in subjects who suffer from chilblains. The affection has been described by M. Dubreuil as "telangiectasic warts." Mibelli gave it its present name. Microscopic examination reveals hyperplasia of the epidermis, together with vascular dilatations in the inflamed papillary layer. There is considerable hypertrophy of the Malpighian bodies. Angiokeratoma can be cured in a few weeks by electrolysis.

Influence of Small-pox on Menstruation, Pregnancy, and Lactation.—Before the *Société centrale de Médecine du Nord*, June 24, 1892, observations of thirty cases of small-pox in women were reported. In five wet-nurses there were five instances of suppression of milk, in two only transient; among six pregnant women there were three abortions, one premature birth, three still-born children, and the death of three mothers. Among nineteen women and girls there were no menstrual disturbances in ten light cases; in three there was metrorrhagia, followed by death in two instances; in four, menstruation was notably hastened, and in two retarded. The small-pox poison, and not the fever, caused these anomalies. They were severe in proportion to the extent of the eruption.

Alkalinity of Blood in Disease.—In the *Revue des Sciences Méd.*, 1892, p. 444, there is a statement to the effect that in general the alkalinity of blood is diminished in proportion to the decrease in number of red blood-globules, in richness of hæmoglobin, and in specific gravity. In pernicious anæmia alkalinity is lessened, but not in chlorosis. It is greatly reduced in leucæmia, diabetes, uræmia, cancer, cachectic states, pseudo-leucæmia, acid poisoning, and fevers of marked hypersthenia. Alkalinity is normally less in women and children than in men.

Psychology of Artists.—A study of artists from the scientific point of view, by Lucien Auréat, is an interesting little volume of the contemporary philosophy series. Brilliant exceptions to the contrary notwithstanding, artists in the main are sensational creatures, with the analytic and synthetic mind, intelligent but not intellectual. The portion of the book devoted to the pathology of painters, gives a striking account of the special infirmities and miseries of genius.

Treatment of Granular Ophthalmia by Pyroctanine.—Legros, in the *Presse Médicale Belge*, June 5, 1892, gives some interesting results of pyroctanine in granular conditions. Old ideas of treating the eye are rapidly giving way to surgical procedures, and these have definite disadvantages. Curetting of granulations, crushing, or expressing them, as done by Knapp and Noyes, of New York, necessitate local or general anæsthetics, and are measures not entirely free from troublesome complications, and do not always give good results. The author inclines, with Wecker, to the belief that treatment directed primarily to the destruction of the granulation itself is reprehensible, and that it is far better to attempt to destroy the supposed specific microbe that is lodged in the infiltrated tissue. Observations made by Valude, Vignal, and Gallamaerts, upon the power of diffusion of pyroctanine, gave to the author the idea of employing this agent in the Ophthalmic Institute of Brussels. Results were most satisfactory, the methyl-violet effecting a cure when used in relatively large doses, two grammes in sixty-five of water. There are no counter-indications for its use. At the same time, it is wiser to employ smaller doses when serious ulcers of the cornea are present. The inconveniences of this method are the following: rather tedious duration of treatment, staining power of the drug, and purplish discoloration of the cornea that persists for some time.

Solar Eczema.—Walters, of Bonn, in *Arch für Dermatologie und Syphilis*, April 15, 1892, notes a case of this kind in a middle-aged woman of excellent health, who, after exposure to the direct rays of the sun one warm spring day, experienced tumefaction of the face and severe outbreak of eczema. These symptoms were also present on the dorsal surface of the hands and forearms. In autumn and winter the sun had no pernicious effect; but in spring eczema appeared again. Wearing a veil had no hindering influence, the disease returning regularly with warm weather. Treatment would effect a transient cessation of symptoms that invariably reappeared upon exposure to the sun for a half-hour. Antiseptic gauze saturated with bichromate of potassium, originally suggested by Veiel, and worn as a veil, produced the happiest results, rendering afternoon sunshine harmless. Later, it was discovered that a green veil proved a better protection for the skin. As chemical rays are not absorbed by green, the conclusion was that caloric rays are alone responsible for solar eczema.

Clinical Department.

SCARLET FEVER TREATED WITH ANTIFEBRINE.

By HARRIET E. GARRISON, M.D.,

DIXON, ILL.

For more than two years I have treated all my cases of scarlet fever with antifebrine, and have been fully satisfied with the results obtained.

I first saw my last case on June 2, 1892. Hilda L——, aged eight years, had taken part with her schoolmates, on May 30th, in the memorial exercises. The day was wet and the children walked a long distance. The next day she was too tired to go to school. On June 1st, toward evening, she developed fever, sore throat, with nausea and vomiting; continued sick all night; but as there were no reported cases of scarlet fever in town the parents were not alarmed.

On June 2d I was called at 7 A.M. The face and extremities were pale, the body covered with a rash of a dark yellowish-red color; tongue covered with a white coating, excepting the tip, which was a bright red, with slightly enlarged papillæ. The pharynx presented the appearance of dark-red velvet; the tonsils were enlarged, and near the centre was a patch of pseudo-membrane; the submaxillary glands were swollen; deglutition painful; bowels constipated; urine scanty, dark-colored, and loaded with phosphates; temperature in axilla, 103° F.; pulse, 180, small and thready. She was still nauseated, and accordingly I immediately gave a few drops of aromatic spirit of ammonia, followed by calomel, 0.1 gm., sodium bicarbonate, 0.2 gm. In ten minutes this was to be followed by antifebrine, 0.1 gm., to be repeated every two hours until the skin was moist and cool. I directed the mother to recall me by telephone if the child was no better by 4 P.M.

June 3, 10 A.M.—Had taken no medicine since 10 P.M. The mother said the child had felt better before 4 P.M., perspired freely, and slept well during the night When I saw her she complained of no distress but a severe frontal headache. Face flushed purple; more swelling in the glands; temperature, 104° F.; pulse, 140, of good volume; bowels open; urine free and natural. The rash appeared on the extremities of a brighter scarlet than on the body. The other symptoms were unchanged. I gave antifebrine, 0.2 gm., with sodium bicarbonate, 0.2 gm., every four hours, to be continued until my next visit unless the hands or feet became cold.

On June 4th the symptoms were all better.

On June 5th the throat symptoms became temporarily worse, but were better the following day. The pseudo-membranous spot on the tonsil had never enlarged, and now looked dry and shrivelled. The temperature and pulse were normal.

My experience with antifebrine has been limited to sixteen well-marked cases. The first was an isolated case in the country, for which, without seeing the patient, I gave antifebrine under the supposition, from the father's statement, that it was follicular angina. This disease was very common at that time, and for it I had used the antifebrine freely, as it would control the angina in from two to four hours. Soon after taking the antifebrine the rash came out, but the patient was so well that I was not called until a younger child was attacked. Her temperature was 103° F. at my first visit, but when I called the next morning it was 101° F. She was well broken out with rash, and felt so well that I made no more visits. The mother reported her as well in less than two weeks.

My next cases were in the family of the Baptist minister, where there were six boys. These boys developed angina with the least exposure. One evening the father came for "some throat-powders for Johnny." The next evening, "Lee needs some powders, Johnny is well." At noon next day I was called to see Lee, aged seven years, and found him well broken out with the rash of scarlatina; temperature, 102° F. The case was not marked except by severe angina, pain in the ears, and swelling of the submaxillary glands, which I have since attributed to giving the antifebrine in too small doses. Two of the other boys, of eleven and sixteen years, had mild attacks. They were isolated with Lee at the first symptoms, and two of the family escaped. This was during what for our town was a severe epidemic. As far as ascertainable from defective reports there were forty cases, with four deaths. Of these I treated seven, without any mortality or sequelæ. In one family one child died, and I was called to treat the other for neuritis of the lower extremities, and the servant-girl, who at this time was sick with the fever. The child and girl made good recoveries. Johnny, who took the antifebrine for angina, is not included in these cases, as I saw no symptoms of scarlet fever after I was called, although until this time he and Lee were room-mates.

My conclusions from these cases are that antifebrine in scarlatina relieves the disagreeable symptoms, as pain and restlessness, and makes the patient comfortable. It shortens the duration of the disease. All my patients have been out of doors in two weeks, and the majority in ten days, after the beginning of the fever. It prevents sequelæ. In no case after using the antifebrine have the patients had any nephritis. Before combining sodium bicarbonate with it I occasionally found a case where the urine was not voided sufficiently often, but since then I have had no trouble. My first case had tenderness, with pain and weakness of the muscles in the lower limbs when I first saw him, three days from the onset of the fever. He had taken no antifebrine since the first day. A dose of antifebrine gave quick relief, and the pain did not return. This is the only symptom of neuritis in any of my cases. The third and sixth cases had severe pain in the ears, which increased doses of antifebrine, combined with hot applications, quickly relieved. In no cases have there been any abscesses in the ears or glands, or any discharges from ears or nose. Case six had every opportunity to develop sequelæ, as when I called at the house the tenth day after the fever appeared, not finding her in bed as I expected, upon asking for her she was brought in from out-of-doors, where she had been playing in a tub of ice-water. Desquamation was not yet completed.

It is best to begin the treatment as early as possible, but it will also be of benefit later on. In my twelfth case the child had been under the care of another physician four days, and the parents said it was growing worse steadily. As the physician had not made his regular call, and they were out of medicine, I was called in while attending a case in the same locality. The temperature was 103° F.; pulse, 160. As the child felt so much better after taking the antifebrine I was asked to keep charge of the case. The second day the fever was controlled, and the child made a quick recovery.

The first dose of antifebrine, if sufficiently large, produces a feeling of rest and the child lies quiet. My favorite way of administering it is to drop the powder into a tea-cup and pour in sufficient boiling water to dissolve it. Then have the child take it in small sips as hot as possible. In some cases I have used acetanalid pills, two and one-half grains; but where the angina is severe the solution makes a soothing application to the throat.

One of the benefits which I have frequently noted in my cases is the improvement in the quality of the pulse after the antifebrine is administered. Even where there is no lowering of the temperature there is an increase of volume and lowering of the pulse-rate. I have attributed this to its effect upon the nervous system.

In what manner the beneficial results are obtained, whether they are wholly due to the antipyretic and sedative action, or whether there is some specific action on the scarlet-fever poison, my observations have not yet determined.

MEDICAL RECORD:

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THE DISEASES AND ACCIDENTS OF GREAT CROWDS.

THE medical history of the great Columbian celebration, which produced so much enthusiasm in this city last week, deserves some attention, and if it could be completely written would prove most interesting. There were probably four hundred thousand or five hundred thousand visitors during the week and perhaps a quarter of a million persons crowded the streets along which the parades were held. It is estimated that two hundred persons were more or less hurt or taken ill. The census as gathered by newspaper reporters from the police reports and hospitals makes the number about one hundred. Our readers will be interested in the list, as showing the accidents and diseases of great crowds. It is as follows:

Fainting, 35; hysterical seizures, 3; epileptic fits, 11; sprains, 3; run over, 3; fractures, 10—1 of the arm, 2 of the skull, 7 of the legs; falls, 11; cramps, 1; dislocation, 1; burned, mortally, 1; struck by a brick, 1; "taken sick," 13. Total, 94.

This shows that fainting is the most frequent pathological phenomenon, that crowds are bad for epileptics, that falls and fractures are numerous, and that delicate people are liable to be "taken sick." On the whole, the record is not a bad one, considering the enormous congregation of people. The reports also show that the sick and injured were promptly and efficiently cared for; and our much abused ambulance service evidently did yeoman's duty on the occasion.

VIVISECTION AND FOX KILLING.

OUR esteemed contemporary *Life* touches most of the events, customs, and manners of the day with a delicate satire in which there is so much good-humor that none can take offence. But it is, we think, a little embittered in its criticisms of the medical profession. We do not recall that it has ever spoken kindly of any physician, except Dr. Jenkins. It was recently both savage and unjust in its comments on certain physiological experiments conducted by a Philadelphia physician. These experiments were characterized as wantonly cruel and useless. There was no foundation for this opinion; and, in fact, we believe just the opposite was true.

Not far from this town there is a club whose business it is, about twice a month, to set free a tame fox, and then to chase it to death with dogs. We are not prepared to say that this is cruel and useless; but we submit that on the face of it such performances appear to be a thousand-fold more brutal than experiments upon the nerves of anæsthetized rabbits, done by trained hands for the purpose of establishing new truths in biology, yet the worrying to death of tame foxes has never excited anything but gentle raillery from the sensitive minds of the gentlemen who write the paragraphs of *Life*.

THE MEDICAL HISTORY OF COLUMBUS.

IT is unfortunate that in the great amount of literature recently put forth concerning Columbus one can find so little regarding the great discoverer's personality. His character and much of his career are still surrounded with a good deal of mystery. It is not to be wondered at, therefore, that the knowledge of his personal characteristics is so incomplete. Columbus is said to have been tall, very strong physically, and to have had red hair, blue eyes, and a ruddy complexion. He married rather young, but later in life formed irregular relations with a lady who bore him a son. He must have been a man of great vitality, and was probably a good liver when he had the opportunity, for he suffered many years from the gout and died finally from that disease. Like most men of powerful physique, and great ambition and energy of character, he probably indulged himself freely, or at least neglected to be prudent of his health. His exposures and privations do not seem to have been altogether the cause of his early physical prostration, for though he contracted "fevers," it is gout, we are told, which kept him an invalid and finally killed him at the comparatively early age of sixty. It is useless to moralize on what might have been if Columbus had been more ascetic; but no doubt the failure of his health had much to do with the neglect into which he fell before he died. If Columbus had retained the vigor of his middle life he would have made things so uncomfortable for his enemies that they would have been forced to give him justice.

TOBACCO AND THE TOBACCO HABIT.

AN article by Jules Richard upon this subject appears in English dress in the *Popular Science Monthly* for September. Tobacco-leaves contain principles common to all vegetable substances, such as starch, sugar, organic acids, salts, etc., and a peculiar alkaloid to which the plant owes its special qualities, called nicotine. Among the volatile principles that pass into the smoke along with nicotine are hydrocyanic acid and carbonic oxide. Of these, a notable amount is absorbed by rapid smokers swallowing this smoke, the gas passing into the circulation. These facts go far to explain the accidents that sometimes occur after hours passed in a medium saturated with tobacco, and even without smoking; and also explain the phenomena of intoxication produced by eating food left for a long time in similarly vitiated air. The decoction of tobacco destroys life in a time short in proportion to the strength of the dose. Tobacco may also poison through the lungs and through the skin. Smoking, which has had many imaginary ills laid to its door, is

really responsible for attacks of suffocation, like angina pectoris, for nicotine amblyopia, for granular pharyngitis, for a special form of asthma, and for epithelioma in the predisposed. Nearly all excessive smokers are dyspeptics. Smoking is bad for everybody, especially for women and children. At the same time, why paint it blacker than it is? Tobacco has never led the reason astray, destroyed the will, or perverted sensibility. The most hardened smoker enjoys perfect clearness of mind. Then the habit of smoking, unlike alcoholism and morphinomania, can be broken up permanently. Tobacco has none of the seductions and dangers of opium and hashish, of ether, chloral, and alcohol. Its action on the nervous system is weak and wholly especial. It does not put to sleep, but it calms and mollifies the sensibility of the organs. It causes an agreeable torpor, during which thought continues lucid and the capacity for work undiminished. Such is the attraction that it exercises, and which causes it to be sought for by so many thinkers and students.

THE TREATMENT OF GOITRE.

In the presence of so much conflicting testimony concerning the merits of the various methods of treating goitre, one naturally hesitates in making choice. To be sure, we must take into consideration whether the growth be parenchymatous or cystic, simple or exophthalmic, recent or of long standing. The plan of treatment then to be adopted will be either by internal remedies, external applications, interstitial injections, electricity, or operation. Possibly some of these methods may be combined. To instance two widely separated methods, geographical as well as therapeutic: Dr. Upendra Nath Sen writes in the *Indian Medical Gazette*, March, 1892, that at Mymensing it is an every-day occurrence to treat half a dozen cases, since half the population is affected. This great prevalence he attributes to the water of the Jamuna River. His treatment consists in the outward application of biniodide of mercury ointment, and the secret of success lies in the fact that "the patient must be kept facing toward the East sun at least for two hours, when the ointment will be absorbed." The cure is more rapid if tincture of iron be given internally at the same time.

Dr. Cline, of Woodstock, Va., states that he has "been surprised just twenty-two times in the cure of goitre." Tincture of iodine is used externally, while corydalis and iodide of potassium are given by the mouth. Dr. O'Reilly reports in the *Lancet*, April 2, 1892, success in reducing the size of a goitre, estimated to weigh six pounds, by the injection of a solution of perchloride of mercury alternating with one of iodine and one of permanganate of potash. When the tumor was reduced to about one-third its natural size and had become hard, it was removed by operation. Dr. Auerbach advises interstitial injections of osmic acid followed by massage for fifteen minutes, while iodine is given internally.

Dr. Kapper has reported marked diminution in the size of the enlargement in soft thyroid tumors, following injections of iodoform emulsion, according to Mosetig's plan.

In the simple goitre which occurs in pregnancy, as noted by Lawson Tait and others, there is usually a decrease in the size of the growth, or indeed it may wholly disappear after delivery; but cases have been observed where this fortunate cure did not occur, and an instance has just been recorded by Dr. Joffroy, where there was an increase with succeeding pregnancies and finally all the symptoms of exophthalmos appeared. Dr. Bally's investigations of seventy-seven cases operated upon at Socin's clinic, lead to the conclusion that intra-glandular enucleation is feasible in most cases, is not attended by dangerous hemorrhages, nor followed by paralysis of the vocal cords due to injury of the nerves; while, as regards recurrence, it gives as favorable results as those offered by partial extirpation, and the operation is not followed by any disagreeable consequences such as tetany or cachexia. Fortunately, goitre is not very common in the United States, but when, as was recently noted in the RECORD, no less than four hundred and twenty thousand persons suffer from the disease in thirty departments of France alone, the question of treatment becomes a very important one.

DOES MERCURIAL TREMOR EXIST?

THE *Journal des Connaissances Médicales*, July 7, 1892, publishes an interesting lecture recently given by Charcot at the Salpêtrière, and reported by Paul Blocq. Three cases of intention-tremor were presented to the class, one due to multiple sclerosis, the others to what is usually supposed to be mercurial poisoning. Mercury has had a bad name from antiquity down, and has been credited with causing numerous ills. To it are attributed various physical disturbances among fur-workers, hatters, mirror-makers, and gilders on wood. Mercury has been accused of remaining in the tissues, notably in bone, whether introduced by the mouth, lungs, or absorbed by the skin; and, according to popular belief, an autopsy would reveal the shining "half-metal" making bright lines or dots in osseous structures. Yet Virchow has never found traces of this popular cause of terror in any human bones. And mercurial tremor? While frequent among those whose profession, so to speak, has poisoned them, there are no records among syphilographers concerning tremor as the result of taking mercury. In shops where mercury is used, seven or eight years of service generally elapse before this symptom appears. When it shows itself in one particular individual, the experienced foreman promptly dismisses the victim, knowing well how rapidly others will be attacked unless this extreme measure is adopted. Charcot concludes that there is no such thing as mercurial tremor, and that the intention-tremor, said to be due to poisoning by mercury, is in reality hysterical, occurring in persons who have developed, or possibly originated, the hysterical state through close confinement, long hours, unhygienic surroundings, and the over-exercise of limited faculties. Dutil has made a special study of hysterical tremor, visiting shops and making examinations of five cases of mercurial tremor, so called, that were found there. In three there were hemianæsthesia, hysterogenic zones, and hysterical attacks, the latter often the precursor of tremor. With hysterical stigmata, as corroboratory evidence, the diagnosis of such cases is plain. And when classic stigmata are absent? Tremor itself is a stigma. There is a mono-symptomatic hysteria, as well as other forms. In tonic hysterias, in which some

poison is the predisposing cause, the nature of the agent seems to exercise some special influence upon its particular kind of manifestation. Lead gives chiefly anæsthesias and paralyses; alcoholism, convulsive crises; and mercury, in particular, this rare form of neurosis, tremor. This newer view of mercurial tremor alters routine treatment. Iodine and vapor baths give way to mechanical tonics—as the douche, shower, and pack—to gymnastics and massage, and to nervine tonics.

CAUSES OF BLINDNESS.

In Trousseau's new book, "The Hygiene of the Eye," the author gives certain statistics based upon causes operating in the 627 cases of blindness that have appeared at his clinic during the past ten years. The most frequent causes of blindness are optic atrophy and purulent ophthalmia. Then come in descending scale irido-choroiditis, glaucoma, traumatism, affections of the cornea, detachment of the retina, trachoma, pigmentary retinitis, chorio-retinitis, sympathetic ophthalmia, myopic sclero-choroiditis, congenital cataract, buphthalmia, optic neuritis, and staphyloma. Nearly one-half of these 627 blind persons had been attacked by some curable disease, and lost their sight unnecessarily. With proper medical care they could have remained useful human beings, instead of becoming useless and a burden to their friends.

ACUTE FEBRILE STERCOREMIA.

In the *Revue Générale de Clinique et de Thérapeutique*, No. 34, 1891, Duclos describes an acute specific fever, due to reabsorption of putrid fecal matters, and accompanied by symptoms of most serious poisoning. It takes the form of a grave attack of intestinal ulceration of the general adynamic type, or may appear as pernicious intermittent fever endangering life. Differential diagnosis can be made with care; and in spite of the intensity and gravity of the symptoms, the length of the disease, etc., the author has only known one death to occur. Drugs necessary are purgatives, intestinal disinfectants, and large doses of quinine.

REGIMEN IN BRIGHT'S DISEASE.

A recent communication from Dujardin-Beaumetz to the French Academy of Medicine states that in chronic nephritis the quantity of albumin excreted is of secondary importance. In point of prognosis the permeability and power of elimination of the kidney are of chief moment, and upon these alone can prognosis and treatment be based. The first thing to be done is to facilitate the elimination of toxines, and to lessen their production as far as possible. Elimination is aided by diuretics, purgatives, and stimulation of the functions of the skin. Proper diet and intestinal antisepsis lessen the production of toxines. Benzoate of naphthol is the best intestinal antiseptic, and a vegetable diet is best suited to sufferers from chronic nephritis. Fish, shell-fish, and fermented milk rapidly produce toxic ptomaïnes and are, for this reason, to be strictly avoided. In a general way, it may be said that meat, especially game, and all kinds of preparations of pork, salaisons, fish, shell-fish, and old cheese are injurious. To this list may be added alcohol, which irritates the kidney and diminishes its power of elimination. Vegetable diet includes milk and its preparations, eggs, cereals, fresh vegetables, and fruit. In recent German discussions some exception has been taken to eggs, not on the ground this time that they increase albumin, but because they augment the amount of retained urea. The question is: Can uræmia be prevented by abstinence from nitrogenous food? The answer is negative, in spite of the fact that non-nitrogenous diet is often advantageous in acute nephritis, though useless in chronic disease of the kidney. Dujardin-Beaumetz believes that this vegetable, or rather non-meat, diet will greatly prolong life, and that it should be earnestly recommended in all cases of Bright's disease.

News of the Week.

Iowa Public Health Association.—The second annual meeting of the Iowa Public Health Association will be held in Des Moines, in the rooms of the Y. M. C. A., October 27th and 28th, beginning at 10 A.M. of the 27th. An interesting programme has been provided, and the occasion promises to be one of great interest.

The Success of Quarantine in New York.—Representatives of fifteen lines, forming the Transatlantic Steamship Association, met at 19 Broadway, and adopted these resolutions:

Whereas, Dr. William T. Jenkins, Health Officer of the port of New York, and his staff, have, in our opinion, by their energy and devotion to duty averted an epidemic of Asiatic cholera that threatened not alone this port and city of New York, but also the entire country; and

Whereas, We consider the work of quarantine was and is conducted with a view to the least possible interference with business interests and travel, so as not to inconsistently obstruct or injure commerce; and

Whereas, We consider the different shipping interests of this port have been treated with impartial fairness; and

Whereas, The Hon. Charles Foster, Secretary of the Treasury, and the officers of the National Government acting under his direction, aided in this noble work; be it therefore

Resolved, That the hearty commendation of this Association be, and is hereby, given to Dr. William T. Jenkins and his staff, and to the Hon. Charles Foster, Secretary of the Treasury.

From July 31st until October 21st 1,120 vessels passed through Quarantine, carrying 96,344 persons, who were all examined by the Health Officer and his corps of assistants. Of this great number of persons, 20,187 were first cabin passengers, 16,145 second class, 19,270 steerage passengers, and 40,742 officers and crews.

American Electro-therapeutic Association.—At the recent meeting of the American Electro-therapeutic Association, the following officers were elected for 1893: *President*, Dr. Augustin H. Goelet, of New York; *First Vice-President*, Dr. William F. Hutchinson, of Providence, R. I.; *Second Vice-President*, Dr. W. J. Herdman, of Ann Arbor, Mich.; *Secretary*, Dr. M. A. Cleaves, of New York; *Treasurer*, Dr. R. J. Nunn, of Savannah,

Ga.; *Executive Committee*, Dr. W. J. Morton, of New York; Dr. G. Betton Massey, of Philadelphia; Dr. Robert Newman, of New York; Dr. Charles H. Dickson, of Toronto, Canada; Dr. J. H. Kellogg, of Battle Creek, Mich. Next place of meeting, Philadelphia, on Tuesday following meeting of Pan American Congress.

A Very Exciting Controversy over Vivisection has been going on in the English press. It has had a curious and interesting result. On October 15th the *Times* published a letter signed jointly by Sir Andrew Clark, Sir James Paget, Dr. Samuel Wilks, and Dr. George Humphrey, four of the recognized leaders of the profession. They declare that they will say nothing more about the subject in public print for these terse reasons: "First, after full consideration, we are satisfied that the scientific aspect of this question cannot receive adequate and just treatment in the columns of a newspaper. Second, because it is hardly possible for us to name any progress of importance in medicine, surgery, or midwifery which has not been due to or promoted by this method of inquiry."

Numerous Complaints Against the Female Specialty Man.—Numerous complaints are being made against the man who continues to send by mail his cheap advertising cards to physicians here and elsewhere. His impertinent persistence passeth all understanding. We wonder if the County Society can suppress the nuisance.

Some Advice from the Ancient Hindus.—The *Charak-Savuhita* says: "The use of perfumes and garlands conduces to virility, fragrance (of the body), longevity, and agreeableness. It affords nourishment and strength, promotes cheerfulness, and dispels distress and ill-luck. The wearing of jewels and ornaments conduces to respectability; it is auspicious and promotes longevity and beauty. It prevents all kinds of misfortune, confers cheerfulness and agreeableness, and enhances vitality. The practice of (washing and) always keeping clean the two feet and the outlets for the passage of excreta and urine, contributes to strengthen the intellectual powers, aids purity, promotes longevity, and destroys distress and ill-luck. The paring of nails and cropping and combing of hair, beard, and mustache, promote nourishment, respectability, longevity, purity, and beauty."

Prize Essays of the Medical Temperance Association.—The American Medical Temperance Association, through the kindness of J. H. Kellogg, M.D., of Battle Creek, Mich., offers the following prizes: 1st. One hundred dollars for the best essay "On the Physical Action of Alcohol, Based on Original Research and Experiment." 2d. One hundred dollars for the best essay "On the Non-alcoholic Treatment of Disease." These essays must be sent to the Secretary of the Committee, Dr. Crothers, Hartford, Conn., on or before May 1, 1893. They should be in type-writing, with the author's name in a sealed envelope, with motto to distinguish it. The report of the Committee will be announced at the annual meeting at Milwaukee, Wis., in June, 1893, and the successful essays read. These essays will be the property of the Association, and will be published at the discretion of the Committee. All essays are to be scientific, and without restrictions as to length, and limited to physicians of this country.

Reviews and Notices of Books.

A Practical Treatise on Diseases of the Skin. By John V. Shoemaker, A.M., M.D., Professor of Skin and Venereal Diseases in the Medico-chirurgical College and Hospital of Philadelphia, etc. Second Edition. 8vo, pp. 878. New York: D. Appleton & Co. 1892.

The second edition of this work has received the benefit of the author's four years additional experience since the original was offered to the public. Important advances have been made in several directions during the interval, which are reflected in the pages. This is especially noticeable in those diseases which have received bacteriological investigation. Electricity as a remedial agent has been treated of in a newly added special section, and the subjects of leprosy and syphilis have received additions from recent literature. All that pertains to dermatology has the imprint of having been written from the standpoint of an active general practitioner. Much attention has been given to treatment, and the author's fondness for combinations of remedies is reflected in over a hundred pages of formulæ, besides those scattered through the text. Forty-five pages of these prescriptions constitute a new formulary to the present edition, which being arranged alphabetically, according to diseases, offers a means of ready reference. The work is illustrated with a number of colored plates taken from nature, and has a very complete index.

Book on the Physician Himself and Things that Concern His Reputation and Success. By D. W. Cathell, M.D., Baltimore, Md. Tenth Edition. 8vo, pp. 335. Philadelphia and London: The F. A. Davis Co. 1892.

The reputation of this book, as an ethical guide to the physician, is so well established that it is only necessary to say it has reached a tenth edition. We are not surprised at its success, and congratulate the conscientious author accordingly.

Transactions of the Medical Society of the State of New York. 1892. 8vo, pp. 540.

This volume is of the usual size and contents, which is to say that it contains the usual number and variety of articles from specialists from New York and elsewhere, and the usual paucity of articles of real value to the country practitioner, for whom the work is apparently more specially intended.

The American Text-book of Surgery for Practitioners and Students. By Charles H. Burnett, M.D., Phineas S. Conner, M.D., Frederic S. Dennis, William W. Keen, Charles B. Nancrede, M.D., Roswell Park, M.D., Lewis S. Pilcher, M.D., Nicholas Senn, M.D., Francis J. Shepard, M.D., L. A. Stimson, M.D., William Thomson, M.D., J. Collins Warren, M.D., and J. William White, M.D. Edited by William W. Keen, M.D., LL.D., and J. William White, M.D., Ph.D. 8vo, pp. 1205. Philadelphia: W. B. Saunders. 1892.

A striking feature of this work is that of anonymous authorship of articles. The authors, thirteen in number, although well-known men, have for some unexplained reason thought best to disclaim all individual responsibility for work on special subjects. Such a proceeding gives their writings a relative rather than positive value, and denies the reader the satisfaction of fixing his own estimate of authority upon particular sections. The editors have shown much judgment in the arrangement of the work, and the subjects are on the whole tersely and practically treated. Large and densely printed as is the work, there is a wonderful amount of material compressed between its covers. While this would be a strong recommendation of the value of the work to the general prac-

titioner, it is altogether too much for the student as a text-book during the college course.

The illustrations are numerous and varied, but of very unequal excellence. We have a wide range between the very good and the very bad. The major part of them, however, are original and, as far as many of them go, will doubtless serve the purpose of a student who has no opportunity perhaps of comparing their excellence with similar ones in standard treatises. Aside from these objections we have nothing but praise for the work. It goes over the ground of general surgery differently and better than most compendiums of its class, and will doubtless earn for itself an enviable position as a standard treatise. We regret that the publishers have classed it strictly as a subscription book; as such it is necessarily made expensive for the student, who must purchase it through agents and consequently without the usual discounts allowed to him.

Regional Anatomy in Its Relation to Medicine and Surgery. By George McClellan, M.D., Lecturer on Descriptive and Regional Anatomy at the Pennsylvania School of Anatomy; Professor of Anatomy in the Pennsylvania Academy of Fine Arts. etc. Vol. II. 4to, pp. 414. Philadelphia: J. B. Lippincott Co. 1892.

The expectations which the first volume of this admirable work encouraged have been fully realized in the second, which completes the work. It comprises all those regions in the lower half of the body, viz., the abdomen, groin, pelvis, perineum, hip, thigh, leg, and foot, as well as the back, lumbar, and gluteal regions. It contains forty-three admirable full-page plates of colored photographs, taken by the author from his own dissections, expressly designed and prepared for this work, and colored by him after nature. These plates embrace larger or smaller illustrations, which in the aggregate give the reader everything required in the way of ocular demonstration of every region of the body. The importance of this work is enhanced by the practical manner in which the several subjects are presented. The method is in many respects original, in that it gives not only the anatomical but the clinical aspects of the subject. It is, in fact, clinical anatomy for the physician as well as the surgeon. The plates are accurate and artistic, and bring the student face to face with actual dissections, made by an experienced teacher who fully appreciates the necessities of the student, and who successfully infuses instructive interest into what would otherwise be dry reading. The work needs only to be known to be properly valued.

Transactions of the Eighth Annual Meeting of the American Climatological Association (1891). Philadelphia: W. B. Saunders. 1892.

The volume is made up of the twenty-eight papers presented at the session held in Washington in September of last year. These are naturally upon topics of special interest to the students of diseases of the respiratory tract, and are all creditable contributions to medical literature. The Association is organized on a sensible basis, has an energetic membership, and has long since justified, by its good work, its existence.

Spondylolisthésis et Spondylizéme. Résumé de Recherches Littéraires et Personnelles depuis 1880 jus-qu'en 1892. Par le Dr. François Neugebauer (de Varsovie). Avec Introduction par le Professeur A. Charpentier. Paris: G. Steinheil. 1892.

This monograph was written by Dr. Neugebauer at the instance of Dr. Charpentier, and was originally intended to form one of the chapters in the latter's work on obstetrics. The essay grew constantly larger as the author went on, and finally it was found to be too voluminous to form part of the other treatise. An abstract of it was made for this purpose, and it was decided to publish the monograph itself in separate form. This subject of spondylolisthesis has been pretty carefully studied b Kilian, Herrgott, and others, but none has ever befor so thoroughly mastered it and produced so valuable treatise as Neugebauer. His work is founded upon th study of about fifty clinical cases, seen by himself an others, and of an equal number of museum specimen The subject is one of especial interest to the obstetricia and to the orthopedic surgeon, and the work before r will, it is safe to predict, be for a long time to come th standard treatise on this deformity.

Geographical Pathology. An Inquiry into the Ge graphical Distribution of Infectious and Climatic Di eases. By Andrew Davidson, M.D., F.R.C.P. Ed Late Visiting and Superintending Surgeon, Civil Ho pital, Mauritius. 2 vols., 8vo, pp. 1004. New York D. Appleton & Co.

The object of this work is to sketch the geographical di tribution of infectious and climatic diseases, and at th same time to trace the influence of temperature, rainfal altitude, and soil conditions on their prevalence, chara ter, and epidemic spread. The fulfilment of such a pu pose by the author is the highest praise that can be give for patient research and wide-spread study. The syste which he has adopted has enabled him to present th subject in a light which cannot fail to interest the phys cian, philosopher, naturalist, sanitarian, statesman, an general student. Indeed, any effort intended to stud the natural laws of disease on a comprehensive scale ca not fail of wide appreciation by a large class of though ful readers. To such this admirable work appeals wit striking force and novel interest. No work we have see has approached it in thoroughness of detail or compr hensiveness in design.

A Manual of Chemistry, Inorganic and Organic, wit an Introduction to the Study of Chemistry. B Arthur P. Luff, M.D., B. Sc. (Lond.), M.R.C.P.; Fe low of the Institute of Chemistry; Fellow of the Chem cal Society; Physician to Out-patients in St. Mary' Hospital and Lecturer on Medical Jurisprudence an Toxicological Chemistry (Late Demonstrator of Chem istry) in the Medical School; Examiner in Forensi Medicine to the University of London; Examiner i Public Health to the Royal College of Physicians London. Illustrated with thirty-six Engravings. Phi adelphia: Lea Brothers & Co. 1892.

This is one of the best text-books on chemistry for med cal students that we have ever seen. It is written b one who is a physician as well as a chemist, and who ur derstands how much of the latter science the student c medicine requires, and also how to present it to him in way to interest and attract instead of to repel. If all th text-books on chemistry put into the student's hands ha always been as practical and "easy" as this, ther would not be such a woful ignorance among physician of the merest elements of the subject as there is at th present day. But if the book before us is a sample o what the rising generation has to study from, we ma indulge in the certain hope that the medical man of th future will know a little of this most fascinating of a physical sciences.

The Essentials of Histology, Descriptive an Practical. For the Use of Students. By E. A Schäfer, F.R.S., Jodrell Professor of Physiology i University College, London; Editor of the Histolog ical Portion of Quain's "Anatomy." Third edition revised and enlarged. Illustrated by more than thre hundred Figures, many of which are new. Philadel phia: Lea Brothers & Co. 1892.

This is intended as a text-book for students pursuing course in class on histology, for which purpose it is wel adapted. It is divided into forty-five chapters or lessons beginning with the human blood-corpuscles and endin with a study of the organs of special sense. Each lesso

egins with brief directions for the preparation of speci-ens to be studied, after which the author gives a clear escription, supplemented by very good illustrations, of hat is to be seen under the microscope. An Appendix ontains directions for preparing and mounting speci-ens. A belated student or young practitioner whose stological education had been neglected might well sup-ly the deficiency by private study guided by this excel-nt manual.

. Handbook of Hygiene and Sanitary Science. By George Wilson, M.A., M.D., F.R.S. Edin., D.P.H. Camb., Fellow of the Chemical Society; Fellow of the Sanitary Institute of Great Britain; Medical Officer of Health for the Mid-Warwickshire Sanitary District; formerly Medical Officer H. M. Female Prison, Woking, and H. M. Convict Prison, Portsmouth. Seventh edition. Philadelphia: P. Blakiston, Son & Co. 1892.

his is a very convenient work for reference or study, nd is one with which any medical man who has to do at l with questions of public health cannot well afford to ispense. Especially will those who practise in the ountry or in small towns find the work of great assist-nce, for it is they who are more often called upon by ie community in times of public peril to advise con-erning measures of safety and protection from a threat-ning or actual epidemic. Indeed, all physicians should ave some knowledge of this most important subject. he author has practically rewritten the entire work for is edition, and has brought it thoroughly up to date. he chapters on "Ventilation," "Water and its Analysis," Communicable Diseases," and "Prevention and Disin-ction," are especially interesting to the practising phy-cian, though the entire work will well repay perusal. ext to the unrivalled work of Parkes, we know of no etter work on sanitary science than this of Dr. Wilson.

Diseases of the Stomach. By Dr. C. A. Ewald, Professor of Medicine in the University of Berlin. Authorized Translation (from the Second German Edition, with special Additions by the Author), by Morris Manges, A.M., M.D., Attending Physician to Mount Sinai Hospital Dispensary, New York, etc., with thirty Illustrations. New York: D. Appleton & Co. 1892.

his work represents Volume II., of Professor Ewald's Klinik der Verdanungskrankheiten." Volume I. is not ncluded, as it has recently been rendered into English y Dr. Saundby. The translator's work, which is of high erit, has been carefully read by the author, and addi-ons made thereto. Hence the volume is not merely a endering of the second German edition, but it practi-ally represents, from its containing the very latest in-estigations on this subject, the third German edition, hich is soon to appear.

To read this volume is to read the history of a very in-eresting development in modern medicine. Dyspepsia a term which can no longer be tolerated in exact clin-al work. It ranks with dyspnœa and dropsy as a symp-matic term only, and not as a pathological entity. s this differentiation Ewald has had an important share nd is to be ranked as one of the highest authorities. he present volume will be welcomed by all, especially hose to whom the original text has not been accessible.

The first two chapters are devoted to "Methods of Examination," and are written with Teutonic thorough-ess. Physical examination comprises inspection, pal-ation, auscultation, and mensuration. Next comes the nalysis of the chemical, absorptive, and motor functions f the stomach. Under the latter are described the use f the tube, expression of gastric contents, salol test or motor activity, etc.

We note in passing that Ewald prefers tubes of differ-nt thicknesses with the lower end open, with one large, tteral fenestrum low down, and a number of smaller penings about the size of a large pin's head. He does not regard the use of such devices as Einhorn's "stomach-bucket" as at all necessary, except in rare instances. He believes that the stomach contents can be obtained in sufficient quantity for examination by the passage of the tube and abdominal pressure.

The sections on the chemical side of diagnosis are complete and easily understood. They are not at all beyond the comprehension of the average intelligent physician. Regarding the normal acidity of the viscus, it might possibly be insisted on with more emphasis that an acidity which is normal in one individual may be hyperacidity in another. There is difficulty in this respect in establishing a normal.

Following this introductory part of the volume are chapters on "Cardiac and Pyloric Strictures and Contraction," "Dilatation," "Ulcer," "Cancer," and the "Inflammatory Diseases." Three chapters are devoted to "Neurosis of the Stomach," and one on "The Correlation of the Diseases of the Stomach to those of Other Organs." "The Practical Value of the Modern Chemical Tests," completes the book.

It is perhaps in the latter that the average reader finds most interest. Such a chapter in a book on a highly specialized topic shows the gauge of a writer's mind. If it is narrow, all maladies will turn upon the condition of the particular organ or organs he treats. The genial Autocrat has remarked that "the specialist has but one fang with which to seize his prey, and that is a long and cruel canine." It is a matter of profound congratulation that in the present volume Ewald shows himself to be a man with a mind of broad gauge. He goes so far as to say that every physician ought to treat gastric maladies with intelligence and success.

In regard to the practical value of the modern chemical tests, Ewald says: "There are two great groups of results in the chemical examination of the gastric juice which differ from the normal. 1. The untimely occurrence of organic acids. 2. The changes in the gastric juice itself (*i.e.*, the secretion of hydrochloric acid, pepsin, and rennet), and the absorption and motility of the organ." The former is always characteristic of definite pathological conditions. These acids mean decomposition or fermentation referable to manifold causes. Regarding the second group it may be said that one class of diseases never causes increased HCl. This class is the one in which an extensive organic destruction or change in the secreting parenchyma has taken place. It includes carcinoma, chronic gastritis and its sequelæ, atrophy of the mucous membrane, and mucous degeneration of the gastric glands; possibly, also, certain chronic vascular lesions, *e.g.*, amyloid changes in the gastric vessels.

An increased secretion is always functional, a sign of irritation, but such over-production may, as the results from exhaustion following over-excitation, or, if attended by depression from the start, cause exactly the opposite condition. The diagnosis of cancer cannot be made merely from the absence of HCl.

We regard Ewald's work as one of the most important of the year. It is not meant to be a text-book, but is rather a course of lectures to practising physicians. As such it is characterized by a fundamental attention to pathology. It recognizes the limitations of therapeutics, and is enriched with a wealth of clinical experience.

Transactions of the Thirteenth Annual Meeting of the American Laryngological Association, Held in Washington, D. C., September, 1891. 8vo, pp. 166. New York: D. Appleton & Co.

This volume contains a number of interesting and instructive papers on subjects connected with laryngology. An idea of their scope and variety can be obtained from the following list: Removal of toy balloon from the trachea; thyrotomy in a child of eighteen months; on paralysis of external tensors of the vocal bands; the tonsils in health and disease; the use of pyoctanin as an

antiseptic in diseases of the upper air-passages; the treatment of the upper air-passages in asthma; nasal papillomata; nasal tuberculosis in a monkey; cyst of middle turbinated bone; diseases of the ethmoid cells; treatment of nasal myxomata; the upper air-passages in influenza; cicatricial contraction of larynx; intrinsic epithelioma of larynx; enlargement of epiglottis; surgical treatment of tubercular laryngitis; and relations of the mucous membrane of upper air-passages to constitutional conditions.

Cancer of the Mouth, Tongue, and Œsophagus; their Pathology, Symptoms, Diagnosis, and Treatment. By Frederic Bowreman Jessett, F.R.C.S. Eng. 8vo, pp. 177. London: Baillière, Tindall & Cox. 1892.

This book for its size contains a great deal of practical value to the operating surgeon. The different subjects are well treated, and the necessary operations in each region are well described. The work contains also a great amount of statistical material bearing upon some mooted points regarding results of different operations. There are several woodcuts illustrating some of the commoner plastic operations about the face.

The Manual of Obstetrics. By A. F. A. King, A.M., M.D., Professor of Obstetrics and Diseases of Women in the Medical Department of Columbian University, Washington, D. C. Fifth Edition. 12mo, pp. 438. Philadelphia: Lea Brothers & Co. 1892.

This now well-known manual has reached its fifth edition, and challenges criticism as one of the best of its kind.

Diseases of Women: a Manual of Non-surgical Gynecology. Designed especially for the use of students and general practitioners. By F. H. Davenport, A.B., M.D., Instructor in Gynecology, Harvard Medical School. Second Edition. 12mo, pp. 323. Philadelphia: Lea Brothers & Co. 1892.

We are pleased to note that this useful work has been properly appreciated, as is evidenced by the early appearance of a second edition. The author is a practical teacher, a perspicuous writer, and one who thoroughly understands what a student and practitioner may wish to know of ordinary and every-day safe gynecology. The illustrations are numerous and serve well their purpose.

Public Health Papers and Reports. Vol. XVII. 8vo, pp. 312. Concord, N. H.: Republican Press Association. 1892.

This volume, uniform with the preceding series, comprises the papers and reports of the Nineteenth Annual Meeting of the American Public Health Association, held at Kansas City, Mo., October, 1891. The subjects treated cover a wide range of thought, which, although consistent with the spirit and purpose of the Association, are open to the objection of presenting a striking variety. For instance, we have strung together, on the consistent rosary of hygiene, papers on empiricism, on rice culture, on diseases among chinch-bugs, on the necessity of bathing, on the heights and weights of children, the relations of plumbers and physicians, the prevention and treatment of rabies, and some hints on diphtheria in the Mexican highlands. They are all good papers, and of sufficient variety to suit any taste.

A Text-book of the Principles and Practice of Medicine, for the Use of Medical Students and Practitioners. By Henry M. Lyman, A.M., M.D., Professor of the Principles and Practice of Medicine in the Rush Medical College, Chicago. With one hundred and seventy Illustrations. Philadelphia: Lea Brothers & Co. 1892.

This is an excellent treatise on the practice of medicine, written by one who is not only familiar with his subject, but who has also learned, through practical experience in teaching, what are the needs of the student, and ho to present the facts to his mind in the most readily a similable form. Although the book contains over nin hundred pages, there has been no space wasted by us less historical essays, prolonged discussions on debatab topics, or "padding" of any kind. Each subject is take up in order, treated clearly but briefly, and dismisse when all has been said that need be said in order to giv the reader a clean-cut picture of the disease under di cussion. The mistake of giving too much space to th section on treatment has been avoided. The reader not confused by having presented to him a variety different methods among which he is left to choose th one most easy of execution, but the author describes th one which is, in his judgment, the best. This is as should be. What the student should be taught is the or most approved method of treatment, for he will hav plenty of time in his early days of practice to learn th views of others, and to choose for himself the plan treatment which may seem to him the best adapted t the occasional case that may fall into his hands.

We have spoken of the work as one for the studen and this because the author occupies so prominent position as a teacher, but we would not be understoo that it is adapted only for students. There is many practitioner of ten years or more standing, who has bee unable to follow the constant advances made in medic science, to whom this work will be of great use. H will find here each subject presented in its latest aspec and only such theories mentioned as have been generall accepted by the highest authorities.

As we have intimated before, Dr. Lyman's work is nc encyclopædic in character, and one who wishes to loo up a subject at his leisure and learn all there is to lear about it, should not look here. But the practical an busy man, who wants to ascertain in a short time all th necessary facts concerning the pathology or treatment any disease, will find here a safe and convenient guide.

Temperament, Disease, and Health. By Frenc Ensor Chadwick, Commander, U. S. N. New York G. P. Putnam's Sons. 1892.

We do not, as a rule, approve of works of this kin written by laymen, for they are generally written t support a fad or a theory, and medical facts are twiste and distorted, or else utterly ignored, in order to a tain the object aimed at. But we cannot say this co cerning Commander Chadwick's monograph. The a thor has a theory, it is true, but it is a theory that in th main does no violence to common sense or to scient fically proven facts. His object is to draw attention t the wonderful rapidity of change in the human body, an to the necessity which this entails of getting rid of th used-up matter that is thrown off from the skin. In othe words, he preaches the doctrine of cleanliness—a mos saving doctrine, and the one upon which man mus chiefly rely for his physical salvation. He carries h theory a little too far, however, in attributing such a larg share in the production of fatigue, after a day's work, t the presence of bacteria and waste products upon th skin. Fatigue, mental or bodily, is something mor than this, and cannot be entirely removed by a bath an change of clothing. The author is thoroughly well rea in the science of hygiene and preventive medicine, an his chapter on micro-organisms is a really admirabl presentation in abstract of the generally accepted bac teriological theories.

Ice-water.—A great deal is said about the danger c drinking iced water, with the thermometer at 97° F. may be well to say something about the danger of nc using it, about the great suffering without it, and th relief from employing it. Iced water, slowly drunk i moderate quantities, is not only a great boon to the ove heated and thirsty man, but it is a necessity in this sun mer climate.—*The Post-Graduate.*

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, October 6, 1892.

LFRED L. LOOMIS, M.D., PRESIDENT, IN THE CHAIR.

tic Brain Disease — Its Varieties, Diagnosis, and reatment — With Illustrative Cases.—DR. HERMAN NAPP read a paper on this subject. The gravity of the tension of disease of the ear to the brain had been appreciated by the profession at all times, but never before e present had it been studied in so systematic a manner, id yielded to conservative surgery such important triphs. All suppurative disease of the external auditory nal might occasionally prove fatal by involving the ain. The warning signal should be given as soon as eningeal irritation was noticed. This being the first ep to otic brain disease, he considered it, and passed ccessively to otic meningitis and suppuration, cerebral d cerebellar abscess, and sinus thrombosis—all of which illustrated by typical cases from his own experience. The chief symptoms of meningeal irritation were pertent headache, occasional nausea, vomiting, and dizziss, with moderate increase of temperature and acceleron of pulse; the latter depending more on the primary tic disease than on the meningeal involvement. Loss appetite and constipation were not characteristic. rcussion was either painless or painful only near the above and behind. The diagnosis between meningeal itation and real meningitis was very difficult.

The form of otic disease most likely to lead to cra-l complications was acute catarrhal suppurative otitis dia, due to pharyngitis, exposure during sea bathing, ., to measles, and scarlet fever. In 1878 he had put gether all cases of acute otitis coming under his prace the first ten years of his stay in New York—182—of ich 4 were fatal. Then he rarely punctured the drum, l never opened the mastoid. He thought now that o of the fatal cases of meningitis might possibly have n saved by opening the mastoid.

Of one of the first cases whose history he related, he d it was one of those of aural abscess, the large major- of which recovered, but some of them terminated ally, which might have been saved by operative interence. The rule to make an early and extensive inci- into the bulging membrana flaccida and the adjacent terior wall of the canal seemed a good one, and in this pect he had been, he said, more conservative and dila- than he ought to have been, or would be in the future. t was difficult to recognize when meningeal irritation l passed over into meningeal inflammation. As soon ersistent headache was followed by attacks of vomit- stupor, and marked rise of temperature, one should e warning and operate at once. Make a large paratesis, and if there was no subjective relief, open the stoid and penetrate the antrum into the attic. Even te cases of otitis might end fatally in a very short time, having reported one case which ended in death on the day; but usually they ran over a fortnight.

Referring to one of the fatal cases from cerebral comation, he said he thought it would have been correct tment to open the mastoid first, and not finding pus, reak the posterior wall of the meatus or enlarge the um into the attic; and not yet finding pus, to open the l above the ear. If no meningitis or extra-dural supation were then noticed, open the dura and incise the poro-sphenoidal lobe. It seemed that in this way the ection of pus might have been reached, but there was puzzling condition of the operator, who at every step he proceeding was confronted with the uncertainty of diagnosis.

here was a group of cases in which the pus in the , antrum, and mastoid cells had a tendency to break ugh the median wall of the mastoid. The pus might e its way outward and follow the sterno-mastoid muscle down the neck, or even to the anterior mediastinum. The author related one case in which he opened into the mastoid down to the lateral sinus, into the attic, also into the cranial cavity through the temporal bone, did not incise the brain, did not find pus. The patient died, and at autopsy there was found purulent phlebitis of the sinuses, and an abscess in the temporo-sphenoidal lobe which could have been reached through the opening he had made, and another in the cerebellum opposite the opening into the mastoid, which might also have been reached had he known its existence. Those were dangerous cases in which the outer table of the mastoid was healthy, and yet there were signs of severe brain disease.

One case was related in which he operated on the ear, searching for pus, and although the man had had otic disease, the cerebral inflammation proved to be tubercular, secondary to pulmonary phthisis.

A woman was presented, whose otic trouble had gone to the extent of producing the pyæmic hue, choke disk in both eyes, etc., but recovered after he had opened into the mastoid and antrum, finding a large quantity of thick pus in the antrum and pneumatic cells, and removing a great deal of diseased bone—the outer table having been found healthy

DR. LANDON CARTER GRAY said the paper added further evidence to the value of an early operation in cases of otitis complicated by symptoms of brain disease. He thought the author took rather a pessimistic view of the difficulties of cerebral diagnosis. All of the cases seemed to have shown that an early operation could have done no harm, and might have been of the greatest benefit. While it was true that it was often very difficult to make a diagnosis between simple meningeal irritation and meningeal inflammation, still in many cases by close observation it could be done. If there was trouble in the ear which affected the facial nerve it would involve the filaments conveying the sense of taste to the anterior portion of the tongue through the chorda tympani. If there was inflammation of the facial as it went off from the base of the brain, this sign would be wanting. There might be vertigo in inflammation of the ear, and also in inflammation at the base of the brain; but it was of a different type in the two cases. Besides, symptoms pointing to implication of other parts might be present in inflammation at the base of the brain. Dr. Gray alluded to the experiments on animals by Avalt, which had led that gentleman to speak of there being in the ear an auditory labyrinth and a tonus labyrinth. If these observations were confirmed on man, they might assist one in distinguishing between vertigo caused by implication of the ear, and that caused by implication of the base of the brain.

The more Dr. Gray had observed of cerebral surgery, the more astonished had he become at the immunity with which operations could be done under antiseptic precautions. We had not yet learned the limits of interference with the brain. In aural disease, if there were any doubt as to involvement of the brain, he certainly would feel that the mastoid cells should be cut down upon, that one should go deeper if necessary, and finally, instead of abandoning the case, lay bare the temporal lobe, and not hesitate even to use the exploring needle or blunt probe. Cranial surgery had given some brilliant results. Of one hundred and sixty-five operations for tumors, the percentage of recoveries had been as high as fifteen. We should go much more freely into the brain in the future in doubtful cases.

DR. BENJAMIN SACHS said the neurologist was not infrequently consulted as to the question whether, in a given case, there was brain disease complicating ear disease, and as to its location, or whether there might be tubercular disease or a tumor. He did not think the differential symptoms were as distinct as Dr. Gray had intimated, and in many cases it was impossible to say whether certain symptoms were due to ear disease or to cerebral disease. He thought involvement of the facial nerve was comparatively rare in the cases under dis-

cussion. The symptoms oftener resembled those of cerebellar tumor. The speaker mentioned a case of supposed cerebellar tumor in a boy, aged eight years, who was taken suddenly with vomiting, nausea, vertigo, dizziness, marked ataxia, slight optic neuritis. He gave an unfavorable prognosis, but one day a free discharge unexpectedly took place from the ear. He related another case, that of epilepsy in a boy who had otorrhœa a long time, the epilepsy developing after the discharge had ceased. The epileptic attacks were preceded by an aural or olfactory aura. At his suggestion Dr. Gerster operated on the mastoid, and the attacks ceased until the passage became again blocked; he then operated a second time, establishing permanent drainage through a silver tube, and there had been no attack for ten months. He had seen two cases recently, noted as otitis, due to nasal operations—a warning for operating rhinologists.

The surgeon should be allowed to interfere in aural disease much earlier than he was usually called upon, and if necessary, one should enter the cranial cavity.

Dr. Emil Gruening thought this subject was one which especially concerned the general practitioner, for otitis seen first by him and neglected, or treated badly, was likely to call for an operation on the mastoid. Boric acid powder, etc., was likely to be blown into the ear and the discharge be stopped, which was just the opposite of what the aurist sought. Peroxide of hydrogen was even worse than boric acid powder, thickening the pus, making it cheesy-like, so that it could not get out. As to operations upon the mastoid, he had done more in Mount Sinai the past two years than had been done in all the other hospitals in the city, and yet he could say that he had always operated later than he should, had he had opportunity, for he had found pus, or the bone softened. If surgeons would operate upon the mastoid in time, they would find the necessity for operating for complicating cerebral disease arise very rarely. When the brain was involved there was apt to be meningitis, abscess, and thrombosis; and he might add that the latter condition, thrombosis of the sinuses, occurred frequently. Its symptoms were usually well pronounced. He thought Dr. Knapp's operations had not been efficient enough. One should do more than open the mastoid and drain. The carious bone should be followed up, removed, and the opening be packed from the bottom with gauze.

Dr. F. E. D'Oench was glad to hear from the neurologists that operative interference in aural disease complicated by brain symptoms was considered at the present time a proper procedure. It had been his misfortune, the last three years, to see five fatal cases of brain disease complicating suppurative otitis. In four he thought there was no doubt of suppurative meningitis, while in one he believed there was a cerebral abscess which ruptured suddenly into the lateral ventricles. In the latter case the patient did well some days after an operation on the mastoid, went out of the hospital, then suddenly developed brain symptoms, strabismus, loss of consciousness, etc. He found nothing at the mastoid and cerebellum, laid bare the temporo-sphenoidal lobe; the brain bulged; he aspirated, withdrawing six ounces of fluid which was not exactly pus, but turbid, and believed to be from an abscess which had broken into the lateral ventricle. The strasbismus disappeared immediately, but the patient did not regain consciousness, and died twelve hours later.

Where dural inflammation occurred in connection with aural disease, ordinarily it was on the posterior surface of the petrous portion.

Dr. M. Allen Starr said he had had opportunity to see one of Dr. Knapp's cases in which a brain abscess was found, and a similar one in Boston, and they had impressed him strongly as to the difficulty of diagnosticating brain abscess in the vicinity of the ear. The neurologist knew about some portions of the brain, but when other unknown portions were affected by disease we had no means whatever of making a diagnosis. When abscess affected the lower temporal convolutions or the lateral lobes of the cerebellum, we had no means whatev of making a diagnosis. From this it followed that whe aural disease called for an operation it should be ma early, before it implicated the brain, as here there was t greatest difficulty in locating the abscess and determini where to operate.

Dr. T. R. Pooley's views were in accord with tho of Dr. Gruening. To this gentleman we were much i debted for the advance that had been made in the su gical treatment of aural inflammation. If his examp were copied more extensively, there would be fewer cas of complicating brain disease. Dr. Pooley related t case of a lad who had had chronic otorrhœa for yea He had had vertigo, nausea, and symptoms pointing cerebral disease, and when seen by the speaker there w diffuse swelling over the mastoid, the swelling extendi down the neck. His assistant operated, making a limit incision and evacuating pus, but when Dr. Pooley turned to the city the lad was still suffering from hea ache, vertigo, and had some fever. He enlarged t wound and cut down, exposing the dura over the late sinus. The relief was only temporary, and besides sym toms already mentioned, choke disk, motor paralys etc, developed, and the patient died. A neurologist h advised against an operation, being in doubt wheth there was cerebral abscess or meningitis, but leaning to t diagnosis of meningitis. The autopsy showed meningi and abscess in the anterior portion of the occipital lol with cerebral softening; also thrombosis of the late sinus, and extension of the inflammation to the jugu vein. An operation, it would be seen, might have reveal the abscess and have seemed a brilliant success, but t meningitis would, any way, have caused death.

Dr. Knapp called attention to the fact that ma craniotomies had been performed, that it had often be necessary to trephine in a number of places, and it w apparent that the difficulty was less in operating than diagnosis and localization. The remarks of Drs. Str and Sachs upon this point were, in his experience, corre In cranial thrombosis, however, the percentage of su cesses had been greater—seven cases, and four successf Thrombosis and subsequent pyæmia were not rare. I agreed with Dr. Gruening that a thorough operation w proper, but he did not believe in going to the extre at first, since if relief did not take place the opening cou be afterward extended. In his own cases his limited i cision, sufficient, however, to evacuate pus, had been ju tified by the result. In ladies, especially, it was not des able to leave too large an opening in the mastoid, as was disfiguring. Where the discharge could be ma abundant through the ear the majority of cases would g well without opening the abscess. He thought that the whole the subject was an exceedingly thankful or and merited further cultivation.

Dr. Gruening remarked that the operation which and Dr. D'Oench performed was not disfiguring.

The Cow as an Enemy of Mankind.—In a discussi on tuberculosis in Chicago, recently, Dr. Robinson sa that the death of babies who are fed by cow's milk is d to germs, and among these germs the tubercular bacill plays a *rôle*. He said that it appeared to him that t home of the tubercular germ is in the cow, and that t bovine family is where the bacillus of tuberculosis fin its native living-ground. He believed that man gets t tubercular germs from this animal. If the people wh have no cows are studied it will be found that they ha less tuberculosis. The people who use the milk of t reindeer, or the buffalo, or the goat will be found wi less tuberculosis than those who use the cow. The h tory of the association of man with the cow is, the speak thought, the history of tuberculosis in man.

Legible Writing.—The Austrian authorities have issu a rescript calling attention to the law that physicians' pr scriptions must be written in a legible hand.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE INTRODUCTORY LECTURES—PHYSICS AND PHYSIC—SIR JOHN LUBBOCK ON THE USE OF OPPORTUNITIES—THE BEARING ON MEDICINE OF CHEMISTRY—DR. MERCIER ON THE NATURE OF INSANITY—SCARLET FEVER IN LONDON—CHOLERA—SIR RICHARD OWEN.

LONDON, October 5, 1892.

THE winter session at the medical schools begins nominally on October 1st, but as that day fell on Saturday this year, real work has only commenced this week, and, in fact, at most of the schools the formal opening of the session was postponed until Monday last. The custom of having an "introductory lecture" is one which is decidedly on the wane, but it is not yet extinct, and addresses have been delivered at several of the metropolitan medical schools. St. George's Hospital led the van by adhering to the time-honored date of the "First," and Dr. Fowles, of Folkestone, gave an address there on that date on "The Application of Physics to Physic." He pointed out that all changes occurring in physiological and pathological processes, formerly supposed to depend on that unknown quantity "vital force," were really only the action of the recognized forces of Nature on the organs and structures of the body. Almost all the work of surgery was done by the proper application of the laws of physics; surgery was really a department of physics—a physical art. Medicine was rapidly following in the same lines. Physiology was steadily elucidating the ways and doings of animal life; by ways and means connected with physics they are getting to understand better and more purely the movements and functions of respiration, of circulation and digestion, of secretion and excretion, and finally they hoped to understand the most subtle and mysterious of all functions, the operation of the nervous system. Physic, or the sphere of the physician, was the application to diseased or disordered conditions of the ways and means of physiology. They reduced to experiment the disordered state that they might learn its real nature and be enabled to bring it back to order by the use of natural and appropriate means. Schröder, Pasteur, and Chauveau had opened up an entirely new world to us. We had now not only to study the causes as well as the changes of the disease in the body, but also the doings of the bacteria outside the body and within it. Each year showed more clearly the value of physics in the department of preventive medicine. The lecturer then proceeded to point out the manner in which physics might be applied for remedial purposes.

The other introductory lectures were delivered on Monday, 3d inst. Sir John Lubbock gave the address at St. Thomas's Hospital. Pointing out that his hearers were preparing for one of the noblest professions—that of ministering to the health of their fellow-creatures—he said they must be also careful of their own health. Few people perhaps realized how much their health depended on themselves. There was many an invalid of whom it might be said, as Milton said of Hobson, that "ease was his chief disease." He urged them to arrange their work so as never to waste a moment. A certain amount of amusement was desirable, and regular exercise was absolutely necessary to all ordinary constitutions. But a great many people, for want of a little forethought, lost a great deal of time in what was neither work, exercise, or amusement. He would not urge them to read nothing but learned or professional works. On the contrary, it was important to keep up general reading, but he was often astonished at the want of care with which many persons selected their reading. It was important to choose their associates wisely. Referring to the profession they had chosen, he said he hoped they would use their opportunities for the advancement of medical science and the diminution of human suffering. Every one of them might, if he chose, make some contribution to the great edifice of human knowledge. Dr. Billings, in his interesting address on medical literature, delivered before the International Congress, had justly observed that "chance may present to the most obscure practitioner an opportunity for observation which the greatest master may never meet." After reviewing some of the advances in medical science which had been made of late years, Sir John Lubbock urged upon the students the importance of cultivating habits of business. Out of a thousand medical students whose careers had been followed by Sir James Paget, less than twenty had failed entirely, except through gross misbehavior on their own part. In fact, in medicine, as in other professions, if a man made himself useful he would be used.

Dr. Luff gave the introductory lecture at St. Mary's Hospital, and after speaking of the importance of moral character, and uttering a warning as to the dangers of excess in athletics, proceeded to discuss the important bearing on medicine of chemistry. Dr. Luff is an accomplished chemist as well as a practical physician, and was therefore well qualified to deal with this subject. He asserted that those who could spare the time to acquire an extended knowledge of chemistry would become possessed of a factor most useful in the treatment of disease, and most potent in aiding the discovery of some of the hidden secrets of the causation of disease. He did not think it was too much to expect that, in the future, the exact modes of action of drugs would be ascertained; that in connection with many diseases, and especially in the case of the infectious diseases, the poisons produced within the human body would be discovered to which the symptoms of those diseases were due, and that, having discovered those poisons, the method of destroying them or rendering them innocuous by antidotes might be found. He pointed out that although some measure of success had been attained of late years in the treatment of diseases of the individual, yet a much greater measure of success had been attained in the prevention of the diseases of communities. In the future, preventive medicine would doubtless attain to a much higher degree of perfection.

Dr. Mercier gave the address at the Westminster Hospital. At the outset of his discourse he reviewed the altered relations of the medical profession to the public. The intercourse of doctor and patient had become less oracular and more confidential. The old view of disease that regarded the patient as a body, some organ of which was deranged in its working, was now passing away. The new view regarded the patient as an acting, thinking, feeling man, whose power of acting, thinking, and feeling was impaired and needed to be restored. Among the results of our increasing knowledge of the action of the nervous system were the altered views that began to prevail with regard to what might be termed diseases of the body politic, by which was meant not widespread maladies affecting large numbers of individuals, such as influenza or cholera, but disorders of the community which might coexist with a good standard of health in the individuals of which the community was composed—disorders which impaired the efficiency of the social body. Such social maladies were crime, pauperism, and insanity. Dr. Mercier, who is a well-known alienist physician, then proceeded to discuss these conditions. He contended that, different as they were in superficial features, they exhibited upon close investigation such substantial similarity that they might be regarded as several branches of one stock. The pauper, the criminal, and the lunatic were alike in being stragglers from the great army of civilization. It had been established beyond cavil by Lombroso and the school of criminal anthropologists that the criminal man was of a different physical organization from the normal man, and resembled the lunatic in many respects. While every insane person was potentially a pauper, nearly all the insane were potential criminals also. There was a

constant transferrence of individuals from one class to the other. Dr. Mercier also contended that the same remedial agent—compulsory employment—was used efficaciously in each of the three disorders. The practical bearing of the view advocated was to be found in the modification of treatment that would follow if the close relationship of the three maladies were admitted. The lunatic could be detained if in the opinion of his physician he was not sufficiently recovered to render him a fit person to be entrusted with his liberty; in the case of the criminal this provision did not exist. It was certain that if the reclamation of the criminal was to be effected, the period of his detention must be indefinite in duration, and must depend on the amelioration of his character. The value of these speculations from a medical point of view was claimed by the lecturer to consist in the broadened and more accurate conception that they afforded of the nature of insanity and allied disorders. The explanation of such phenomena was to be found, not in visible structural peculiarities, but in the operation of biological and sociological laws; not in alterations of the brain, even though such alterations existed, but in the ancestral history of the individual, and in the complex interactions between the forces that animated him and the conditions in which he was placed.

At University College the introductory address was given by Mr. S. J. Hutchinson, Dental Surgeon to the Hospital, and at the Middlesex Hospital, Dr. J. J. Pringle, Physician to the Skin Department, gave the lecture.

Scarlet fever is still on the increase in London, and the accommodation afforded by the hospitals of the Metropolitan Asylum's Board is quite inadequate for the present needs, although last week these institutions contained 3,823 cases—a large proportion of these being cases of scarlet fever. An additional temporary hospital is, however, to be opened this week.

There are no cases of Asiatic cholera now in England though deaths from choleraic diarrhœa continue to be reported from time to time, but only in small numbers and singly.

Sir Richard Owen is still in a critical condition, notwithstanding that he improved considerably recently.

SOUTHERN MEDICAL EDUCATION.

To the Editor of the Medical Record.

Sir: In your issue for September 3, 1892, you purpose to quote from the *Atlanta Medical and Surgical Journal* a list of applications for licenses from the Medical Boards of Virginia and Alabama, but the Virginia figures are omitted.

If you will consult an editorial in the *Virginia Medical Monthly* for July, 1892, page 323, you will find the computations given below. They conjointly apply to Virginia and Alabama:

"Per cent. of Rejections of Graduates of Southern Medical Colleges, 13.7; ditto, Western Colleges, 19.4; ditto, Northern Colleges, 29.2."

The basis of the figures of the *Atlanta Journal* is somewhat unfair to the West and South. The Eclectic schools of the West and South lower the good standing of these two sections, and the graduates of the schools in Washington, D. C., some of them negroes, are accredited to the Southern Colleges. We beg to be excused from such comparisons, and such geography.

Great are the Northern schools, long live the Northern Schools, but unfortunately students will attend the low-grade schools in the West and South. And, strange to relate, several of the graduates of such schools are Army Surgeons, and quite a number of them are Naval Surgeons, while others of them lead in the teaching and the practice of Surgery and Gynecology in the greatest of orthodox medical centres, New York City.

Thomas R. Evans, M.D.

Burlington, Ia

CHOLERA IN NEW YORK IN 1832.

To the Editor of the Medical Record.

Sir: The following short account of my experience with cholera in 1832, and of the treatment employed, may be of interest to the readers of the Medical Record. At that time I was a senior student in Professor John M. Smith's office, reading all that came to hand of cholera and its treatment. The first case in the city was announced on a Sunday morning at James Slip. I immediately went there. In a small attic room of a two story house, one young man lay dead from cholera, and another on the other side of the room was in the last stage of collapse. I remained there several hours to learn what I could of cholera.

As many of the city physicians had fled, senior students were in demand to carry out the prescriptions of the hospital physicians. I received an appointment in the Rivington Street Hospital, and served the whole time; remaining there two weeks after it had virtually closed, to do up the writing. My home was with my parents in Cherry Street, between Roosevelt and Franklin Square, where I spent one night in the week. My sleeping time in the hospital was from 6 P.M. till 12 M., on a cot on the platform in view of all the patients on the first floor. A half-peck of rather hard peaches was brought in about 11 A.M. daily. I used to eat twelve of these with sugar every day at 11 A.M., at 4 P.M., and at 12 M., when called from my slumber to duty. They at no time disagreed with me. One evening on my way home, having eaten heartily of soft toast, I felt a fulness at the epigastrium. The next morning, just before day light, I had an evacuation of seemingly a gallon of water as soon as it was light I took five, five-grain blue pills, and went to Pearl Street opposite Centre Street, and had a hot bath, and then rode in a carriage to the hospital for duty. I was very weak, and lay down all day except when called up. I continued well after that. I cannot tell the internal treatment at the hospital, but there was no success, as mild cases only recovered. The external treatment with every patient was to be scrubbed thoroughly with stiff brushes, loaded with Cayenne pepper and blue mass. Five men to each patient with long handled brushes, one to each arm, one to each leg, and one for the body, as soon as they could be disrobed after arrival. This was to secure stimulant and mercurial effect. One man, after passing through all the routine of treatment, was left to breathe his last, resembling a terribly emaciated corpse. He then had a quart of bicarbonate of soda solution thrown into his veins at the bend of the arm. It was strange to see him revive from this immovable, shrunken, death like condition, the veins of his nose becoming filled, the skin reddening and expanding, then his limbs beginning to move, and he to survive. His life was prolonged some thirty hours. It was a common thing for those who died through the day and who were put in a coffin at night, to be found the next morning with their arms out of the coffin, or their hands up to their head. A girl about eleven years old, apparently dead, with her eyes partly open and a film covering the lower half, for some undefined reason was left when the others were taken out. Her appearance did not change, and so she was left for five days. I think on the sixth there was some sign of life. She recovered, but with ulcerated corneas.

It was my business to take the hospital report to the City Hall at 12 noon daily. Returning one day when the hospital was about to close, a fellow-student wished to know our success in treatment. I said we had none, everything failed. He said that he had lately been successful with some patients. That he gave twenty grains of calomel with two grains of camphor every two hours until some green appeared in the stools. A dozen or so small lumps of ice were allowed at a time to quench the thirst, and a sinapism was placed over the stomach. When the hospital was virtually closed, and I left the

one, a man was brought in, seemingly as bad as any e had had, with the characteristic symptoms—intense irst, vomiting, purging, and cramps of the extremities. treated him as suggested by my friend Olliffe. The ice as retained, and after two or three doses of the calomel nd camphor a greenish fluid appeared. I then followed ie calomel in due time with castor-oil. A few days after nother man was brought in in the same condition. He as treated the same way, and as speedily recovered. In l of our cholera seasons since, if I saw my patient before ollapse set in, I have been successful with the same eatment, in whole or in part. The ejections upward nd downward, like rice-water in appearance, indicate iat there is inaction of the liver. The sedative influ- ce of twenty grains of calomel with the camphor quiets ie stomach and acts speedily upon the liver, killing the isonous bacilli and causing the speedy disappearance cholera symptoms. The ice being retained, perhaps ded by the sinapism, relieves the thirst. One cholera ason, 1849, so many physicians left my neighborhood, at I had from fifty to seventy patients to see daily, eat- g my food often along the street. I lost no patients at is time with cholera.

In 1854 I was requested to go to English Neighbor- ood, now Fair View, six and a half miles from Ho- oken, as an epidemic of cholera had broken out there om a load of decayed fish. All died, so that the doc- r refused to go, saying it was of no use. The gentle- an, Mr. Daniel Talcott, a committee of one from the eighborhood, assured me of my pay by offering a blank ieck to fill at my own price, and a carriage to take me ick and forth. I went; found some on the border of llapse. All recovered with the same treatment. I was id by one family $150, and received a large, elegantly nbossed silver pitcher, engraved, as a token of successful eatment of cholera in English Neighborhood in 1854. r. Talcott is still living, doing business in this city as real estate agent, having left the cotton trade, but still es at English Neighborhood. He will give particulars that fearful time, that I am now unable to do.

Respectfully,

EDWARD VANDERPOEL, M.D.

NEW YORK, September 30, 1892.

Medical Practice in Oklahoma.—Dr. E. O. Barker, of e Oklahoma Board of Medical Examiners, writes to the *'edical Age* concerning the law regulating medical prac- e in that territory. A certificate authorizing us to prac e medicine may be obtained on presentation of a diploma om a medical college of good standing and the payment a fee of two dollars. If the applicant be not a gradu- e of a recognized medical college, he must submit to an amination prescribed by the Territorial Board of Med- al Examiners If the result of this examination be sat- factory, a certificate to that effect will be issued. The e for examination is twenty dollars, one-half of which ill be returned in case of failure to pass. Certificates of aduation have been issued, up to the present time, to ie hundred and seventy-one applicants, five of whom ere women. One diploma has been rejected as from a audulent college. Certificates of examination have been sued to twenty-two, all men. A number of arrests for olation of the law have been made, all resulting in con- ction, so far as they have come to trial.

Disinfectants.—Experiments recently made by the ealth Board of this city concerning the relative germi- dal properties of various substances resulted as follows, e disinfectants being arranged in the order of their fectiveness: Corrosive sublimate, 64 grains to the gal- n; carbolic acid, five per cent. solution; bromine, one und to 200 gallons; permanganate of potash, $7\frac{3}{4}$ ounces 200 gallons; chloride of lime, 4 ounces to the gallon; lphate of iron, $1\frac{1}{2}$ pound to the gallon; sulphate of nc, 4 ounces to the gallon; common salt, 2 ounces to e gallon.

Therapeutic Hints.

The Therapeutic Value of Calcium Salts.—Dr. Germain Sée advises the more general employment of calcium salts in medicine in preference to those of potassium or sodium. Iodide and bromide of calcium are especially useful, he says, when we desire to obtain the effects of bromine or iodine on the organism. They contain a greater percentage of iodine and bromine than any other salts, and furthermore, calcium has neither the often undesirable activity of potassium, nor the inactivity of sodium. Iodide of calcium is well borne by the stomach when the potassium salt disagrees, and it is fully as efficacious as the latter in syphilis, and in its action on the heart and respiration. Bromide and chloride of calcium are useful in a great many diseased conditions of the stomach, and in dyspepsia. They may also be substituted with advantage for carbonate of calcium when it is desired to restore lime to the organism, for chalk is absorbed with difficulty, the greater part of it passing away unchanged from the bowels.

Treatment of Chorea.—Dr. Baumel believes that in the great majority of cases of chorea the predisposing cause is anæmia, the exciting cause being dentition, especially the evolution of the large molar teeth from the sixth to the fourteenth years. He uses the following:

℞. Potassi bromidi ..... gr. xxx.
Syr. aurant. cort. ..... ʒj.
Aquæ ..... ʒ iij.
M. Sig.: To be taken in the course of twenty-four hours.

In addition to this he gives one grain of reduced iron morning and evening, together with a tablespoonful of decoction of cinchona in a glass of sweetened milk.

Paroxysmal Tachycardia.—The following is the formula recommended by Huchard in the treatment of this condition:

℞. Quininæ sulphatis,
Extracti ergoti aquosi ..... āā gr. lxxx.
Extracti nucis vomicæ ..... gr. viij.
M. et div. in pill No. 40. Sig.: Two pills, two or three times a day, for a fortnight.

This remedy, which is especially indicated in cases in which there is diminished arterial pressure, may be followed by from 10 to 20 drops daily of Pearson's solution of arsenic, continued for six or eight weeks.

Hæmorrhoids.—Dr. Kosobudski uses the following ointment with good effect in hæmorrhoids:

℞. Chrysarobin ..... gr. xl.
Iodoform ..... gr. xv.
Extract of belladonna ..... ʒ ss.
Vaselin ..... ʒ jss.
M. Sig.: For external use.

Lamb's Blood-serum in Syphilis.—Dr. Tommassoli reports in the *Gazzetta degli Ospitali*, November 28, 1892, six cases of syphilis treated by the daily injection of $\frac{1}{2}$ to 2 drachms of lamb's blood-serum. The serum was injected into the fleshy parts of the nates, and the operation was followed by massage of the part. He asserts that all the manifestations of the disease disappeared with a rapidity that he had never seen in any other mode of treatment.

Antidote for Carbolic Acid.—A strong solution of sodium sulphate, introduced into the stomach through a tube if the patient is unable to swallow, is reported to be an efficacious antidote in cases of poisoning by carbolic acid.

Local Anæsthesia is said by Dobisch to be readily produced, in about one minute, by a spray of menthol, one part; chloroform, ten parts; and ether, fifteen parts The anæsthesia continues for from two to six minutes, and may be prolonged indefinitely by the renewal of the spray for a few seconds at a time, as needed.

Vaginismus.—The following is recommended by De Sinéty as affording relief in obstinate cases of vaginismus:

R.	Thymol	gr. iij.
	Extr. belladonnæ	gr. xij.
	Potassii bromidi	ʒ ss.
	Ol. theobromæ	ʒ iv.

M. et ft. suppositoria No. iv. Sig.: One suppository, as needed.

Habitual Abortion.—Dr. Turrazo has obtained excellent results in the treatment of frequent and habitual abortion by means of assafœtida. As soon as pregnancy is diagnosed he prescribes pills of assafœtida, containing one and one-half grain each; beginning with two pills a day, and gradually increasing to ten. After maintaining the administration at this amount for some time, the number of pills is very gradually decreased, but the remedy is not wholly discontinued until the normal term is reached.

Salol in Infantile Diarrhœa.—Dr. Mensi speaks well of the action of salol in the diarrhœa of children. It produces, he holds, perfect antisepsis of the intestinal canal, rapidly arrests the watery discharges, and is non-irritating to the gastric mucous membrane. He prescribes it in daily doses of from three to thirty grains, according to the age of the child and the gravity of the disease.

Catarrh Snuffs.—Dr. Capitan, writing in *La Médecine moderne*, recommends the use of the following powder as a snuff at the beginning of a coryza:

R.	Tannin	gr. xv.
	Salicylic acid	gr. xx.
	Salol	ʒ ij.
	Boric acid	ʒ j.

This powder is irritating to the mucous membrane, and therefore ought not to be used after the first twelve hours. The patient may later use a snuff composed of equal parts of boric acid and Venetian talc. The following has been advised in cases of chronic coryza:

R.	Menthol	gr. x.
	Sodium biborate,	
	Potassium chlorate	āā ʒ ss.

Emulsion of Iodoform in Echinococcus Cysts.—Professor Billroth evacuates the cyst of its contents, injects an emulsion of iodoform, and then closes the wound. If the cyst be voluminous, there is danger of iodoform poisoning. This method was tried in four cases with successful results.—*Lancet-Clinic.*

Resorcin in Malaria.—Dr. Samuel Wolfe speaks highly of resorcin in the treatment of obstinate malarial conditions. He gives it according to the following formula:

R.	Resorcin	ʒ iij.
	Tr. eucalypti	fl. ʒ j.
	Syr. limonis	fl. ʒ ij.
	Aquæ	fl. ʒ j.

M. Sig.: Teaspoonful three times daily.—*American Therapist.*

Treatment of the Algid Stage of Cholera.—Dr. Mayländer describes, in the *Berliner Klinische Wochenschrift* of September 5, 1892, the treatment employed with marked success by Dr. Giacich for cholera in the algid stage. His aim was to support the failing heart, and for this purpose he gave ammoniac internally and ether hypodermically, and also administered alcohol freely. Marked improvement in the general condition was noted within two hours after the institution of this mode of treatment, and over fifty per cent. of those who had reached the algid stage were saved.

Vomiting of Pregnancy.—Dr. Weil recommends that ten drops of a twenty per cent. solution of menthol in olive-oil, dropped on powdered sugar and sugar sprinkled over it, be taken whenever nausea appears. By this means relief can be obtained, he says, in the most severe cases of apparently uncontrollable vomiting.

New Instruments.

THE ESSENTIALS OF A GOOD STETHOSCOPE.

By CHARLES DENISON, A.M., M.D.,
NEW YORK.

I HAVE been promising myself for some time to write protest against the frauds of instrument-makers in t manufacture of the stethoscope which bears my nam My instrument was not patented, as it should have be for the purpose of needed regulation as to the quality work and reasonableness of price. Therefore it is ea for an instrument-dealer to order a lot made by an ir sponsible manufacturer, and sell them to unsuspecti medical men, as the real article, at an unreasonable prof This has been done in two instances in New York, a one in Chicago, to my knowledge. In consequence r attention has been called to the most awkward and i perfect imitations, under the name of "The Denis Stethoscope," and I have been chagrined to see join uneven and loose, tubes impervious or partly occlude and especially the flexible portion made with inflexit rubber tubing, with no regard whatever to my dire tions.

In London, Down Brothers have made a pretty f instrument, excepting their poor adjustment of the sprin but in this country George Tiemann & Co. are the or ones whose make I can recommend. They have cor nearer than any other manufacturer that I know of in fi ing the requirements of a perfect binaural stethosco which desiderata I will state as follows:

1st. **The Smooth Inner Calibre,** large size and grad ally decreasing from the bell to the ear-ending, in imit tion of the speaking-tubes used for deaf persons. T law of sound is like that of light transmission, *i.e.*, t angles of incidence and reflection are equal; and t transmission is aided by the trumpet-shaped bell a gradually decreasing size of the smooth inner surface the tubes.

2d. **The Continuous Transmission of Sound.**—Th must be natural, so hard rubber or celluloid are pref able to metal for the tubes, as the latter gives a hi pitch and metallic sound to the sounds heard. The join between the bells and the main tube, and between t arms and the flexible tubes, are made by the even a perfect fitting of slightly conical tubes into each oth making the whole instrument as if of one piece, as far the transmission of sound is concerned. Probably larger part of the sound is transmitted through the steth scopic substance than through the hollow cavity.

3d. **The Construction of the Flexible Tubes.**—T coiled wire for these tubes, which lines the usual rubb tubes and is itself lined with smooth soft rubber, is ma to impinge at each end of each tube against the gut percha, so that a nearly perfect transmission of sound obtained. This is the part that Tiemann & Co. alo have succeeded in rightly making, and it is an importa feature of my stethoscope.

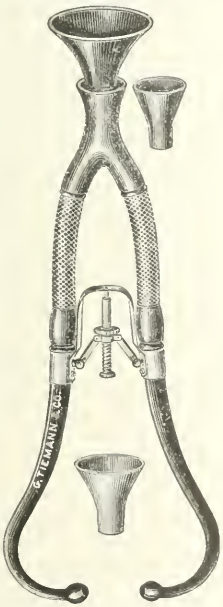
4th. **The Ear Endings** as lately made are acor shaped, with openings so turned as to be directed direc toward the drums of the ears. This is a compromi from what I wanted, which was to have the lower a forward side of these tips bulge so as to fill the space b hind the tragus, and leave the hole above and back i mediately in front of the auditory canal. The difficul of fitting variously shaped ears with perfectly adapt ear-tips is considerable with any other than the ev conical pattern, but, I think, ought to be overcome.

5th. **The Spring Attachment** to pull together t arms is adjustable so that all the pressure of the ear-t can be obtained that the listener can stand with comfo This much pressure is desirable for perfect transmissi of sound.

6th. **The Ordinary Bell Endings** are as follows: T stationary bell, with slightly flaring rim one and one-eigh

h in diameter, which is large enough to use in examination of infants and in the detection of valvular ions. The medium-sized bell, which has a rim one and half inch in diameter and sufficiently flaring to give ood impinging surface against the chest, is the size linarily used. The soft rubber bell, rather thin and ible, is intended to crowd into the medium-sized bell, ing a one-fourth inch projecting rim of soft rubber use on uneven surfaces, as in much emaciated conaptives.

th. **The Large Bell for Stethoscopic Percussion.**—is is not, as has been assumed, for use held against the st-wall, but for gathering the waves of sound emitted m the open mouth during expiration while forcible cussion is being made over portions of the lung where tening, bronchiectasis, or excavation is suspected. e concussion of the air contained in the thorax carries h it the succussion, the cavernous, or the cracked-tal sounds which accompany the three above-named ditions, and by holding this large bell two inches from patient's mouth, and percussing during expiration, they distinguished better than can be done in any other y. Indeed, in thin chested sons with superficial exations connected with a in bronchus, the fingerl percussion will nicely l accurately outline the its of the excavation. e cracked-pot or hollow nds are altered in various ys, a slushy or succussion ility being sometimes imted to either, according the amount of moisture breaking down which comcates the condition. I ieve that the importance the question of the first aking down of lung tisselevates this stethoscopic cussion to a first place in art of physical diagnosis. l is certainly coequal with dinary percussion, and sec-d, if at all, only to auscultion.



The test I suggest of a od stethoscope is not, as umed by Dr. Valentine in article in the MEDICAL CORD of July 16th, to hold medium-sized bell against face of a watch, but put watch on a show-case or table, cover it with the palm the hand, and then press the bell against the back of hand. The clearness with which the working of the chinery is heard is the criterion of perfection in the inment. By this test seven-eighths of the other stethospes sold fall short of their proper utility. I am willing ave my instrument, if properly made, tried by this test l if anyone will improve on mine as much as I have imved on the ordinary kind, I will have his make if it costs o. I do not believe, however, that there is room enough the perfect reproduction of auscultation sounds for so ch improvement, unless it would be with a telephonic thoscope, which would necessitate an electric battery ompaniment.

Portability and cheapness of construction are not cral points in a good stethoscope. Utility should be sidered first, last, and chiefly. Yet the former points uld not be lost sight of in making my instrument. It uld be as short and compact as flexibility and conience of use will allow, and should be proportioned ts different parts about as shown in the accompanycut.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 15. 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	32	15
Scarlet fever	63	6
Cerebro-spinal meningitis	0	3
Measles	28	1
Diphtheria	59	14
Small-pox	9	4
Cholera	0	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0

Tendoplastic Operation.—Dr. H. Sporon describes, in the *Hospitals Tidende*, vol. ix., No. 50, an ingenious method of elongating a tendon. After exposing the tendon he makes in it two parallel longitudinal incisions of equal length, one of which begins about one-third inch above the other. Then, from the upper end of the first and the lower end of the second, he makes incisions to the edge of the tendon in opposite directions, at right angles to the primary incisions, as shown in the accompanying diagram. [ ] This done, it is possible to elongate the tendon as much as may be desired, according to the length of the parallel incisions first made, without destroying its continuity. In a case of talipes equinus so treated the patient was able to put his heel to the ground and walk about, with the aid of a stick, in four days after the operation.

Suture of the Lung.—At a recent meeting of the Paris Academy of Medicine, Dr. Guermonprez reported an interesting case of suture of the lung in a young man of eighteen years (*Journal des Sciences Médicales de Lille*, September 2, 1892). The patient had pyopneumothorax following a pleurisy. Thoracoplasty was practised, six ribs being exsected, when the gaping orifice of the broncho-pleural fistula was readily seen. Some difficulty was experienced in closing the opening, as one of the sutures broke and another tore through the pulmonary tissue, but finally three catgut sutures were passed, one of them going directly through the centre of the fistulous track and embracing a sufficiently large portion of the lung tissue to hold firmly. As soon as these sutures were drawn together the passage of air through the fistula ceased, and on the thirty-eighth day after the operation cicatrization was complete.

Post-Influenzal Chorea.—Dr. Corrado Ferrarini, writing in *Lo Sperimentale*, relates a case of chorea, following an attack of influenza, in a child ten years of age. The first manifestations of the disease appeared in the face about twelve days after the beginning of the influenza. Then the muscles of the upper extremities, and finally those of the lower limbs, became involved. The author attributed the chorea to poisoning by the toxine of influenza, and thinks that it is frequently due to an infection of some sort occurring in those already predisposed.

Docking Horses.—There is a law in Massachusetts against the practice of docking horses, and the Society for the Prevention of Cruelty to Animals has succeeded recently in obtaining several convictions under its provisions. The law reads as follows: "Whoever cuts the solid part of the tail of any horse in the operation known as docking, or by any other operation performed for the purpose of shortening the tail, and whoever shall cause the same to be done, or assist in doing such cutting, unless the same is proved to be a benefit to the horse, shall be punished by imprisonment in the jail not exceeding

one year, or by fine of not less than one hundred nor more than two hundred and fifty dollars. One-half of all fines collected under this act, upon or resulting from the complaint or information of an officer or agent of the Massachusetts Society for the Prevention of Cruelty to Animals, shall be paid over to said Society in aid of the benevolent objects for which it was incorporated." A similar law was also passed at the last session of Congress for the District of Columbia.

Reflex Toothache.—In a case of toothache for which it is difficult to find a cause, the possibility of its being a reflex expression of trouble in some other part of the body, or in some other tooth, must not be forgotten. Slight operations in the nasal passages, such as the removal of adenoid growths and the cauterization of hypertrophied mucous membrane covering the turbinated bones, may be followed by toothache. Diseases of the eye and ear, of the stomach, of the uterus, and the condition of pregnancy may be accompanied by pain in the teeth.—Dr. C. P. Briggs, in the *International Dental Journal*.

Morvan's Disease, according to Dr. Zambaco, is really nothing more than a form of leprosy. The same author holds also that there are two distinct varieties of syringomyelia, one of which is likewise leprosy. In this variety of syringomyelia there is the claw hand like that met with in anæsthetic leprosy, and the patients also have other sensory and trophic symptoms of the latter disease.

The Ice in Paris is to receive more attention from the health authorities than it has had hitherto. It has been forbidden to cut ice from, or to make ice artificially from, the water of the Epinay-Enghien basin, a pool connected with the river Seine, and receiving from it the greater part of the sewage of Paris. Strange to say, much of the ice supply of Paris has been derived from this source. The health authorities have also appointed ice inspectors, who will from time to time make analyses and bacteriological examinations of various specimens of ice obtained from the dealers.

Vomiting of Pregnancy, when severe, is treated by Dr. Neichtoube in the following way :

℞. Cocaine sulphat..... gm. 1
Aq. dest..... gm. 60

Take ten drops. If necessary, repeat in an hour. If no effect is produced, repeat at the end of three hours. The following day give five or six drops three times, and keep it up until the vomiting ceases. At the same time apply to the vagina tampons covered with a two per cent. cocaine ointment.

Simple Tests for Impurities in Water.—The following methods of determining the presence of impurities in water are given by Walling : 1. For organic matter, put a little of the sample into a beaker, add two or three drops of dilute sulphuric acid and color distinctly with a solution of permanganate of potassium. If much organic matter is present the color of the permanganate becomes discharged almost immediately ; if less or very little, it takes longer to decolorize. If the color has not changed in twenty-five or thirty minutes it is safe to assume that organic matter was not present. This is a tolerably reliable test. 2. For nitrites, a little sulphuric acid added to the water forms nitrous acid if nitrites are present, which is easily detected by its power of liberating iodine from iodide of potassium. A little starch paste is mixed with a small quantity of a solution of potassium iodide, and the mixture added to the suspected water containing the sulphuric acid. If nitrites are present the nitrous acid formed liberates the iodine from the iodide, which turns blue with starch. This indirect method is a ready means for detecting the nitrites if present in not too small a quantity. 3. Nitrates are detected by converting into nitric acid, which turns morphia red. A portion of the water is evaporated to dryness the residue treated with a drop of strong sulphuric aci (which makes nitric acid of the nitrate) and a portion c morphine added. If nitrate is present the morphin gives red color. 4. For ammonia, Nessler's reagent i by far the best test. It may be made by dissolving eigh teen grains of oxide of potassium in a little water, addin solution of mercuric chloride until the red iodide c mercury first formed redissolves upon agitation. To th is added a solution of fifty grains of caustic potassa an distilled water to make eight ounces. This reagent wi detect 0.00375 of a grain in a pint of water by giving yellow color. A reddish color or precipitate forms wit larger quantities of ammonia. 5. Albuminoid matte requires a more elaborated proceeding for its detection If all of the above were found it is hardly necessary t go to the trouble of looking for albuminoids ; the wate would be unwholesome even if they were not present.—*Pharmaceutical Era.*

A Defence of the Use of Opium by Women in India—At a recent meeting of the Woman's Missionary Con ference in Toronto, Miss Beatty, a medical missionar from the western part of India, spoke against the effort making to restrict the use of opium by the natives of tha country. She said it would be cruel to take it awa from suffering womanhood until civilization had opene the door of the zenanas to medical men or there wer enough women doctors to relieve the agonies whic women suffer and must bear without treatment. Opiur is inexpensive. All women take it. All babies ar drugged with it, and the poor little child-wives are r lieved by its aid. "I have seen," said Miss Beatty, " little girl of thirteen with her own baby on her lap. was drugged and no trouble to her. How could it b when it was asleep ? And she would put up her littl hands and plead for a doll to play with while she wa free from the care of her little one. While the presei awful state of things maintains in India, opium is som thing to thank God for."

Dog Meat.—A French paper says that the number c dogs slaughtered at the abattoirs in Munich has increase amazingly in the past few months. The taste for dog flesh is said to have been imported by Italian laborer who have recently come in large numbers to the Bava rian capital. The meat is not used only as an adulterai for sausages, but is eaten openly, under its own nam prepared in various ways.

Law Against "Sweating."—Several tailors living the Hebrew quarters on the east side of the Bowery hav recently been arrested for violating the factory inspectio law. One of the two provisions of this law, designed t break up the sweating system, which they are accused c violating, reads as follows : "No room or rooms, apartmer or apartments in any tenement or dwelling-house shall b used for the manufacture of coats, vests, trousers, kne pants, overalls, cloaks, furs, fur trimmings, fur garment shirts, purses, feathers, artificial flowers, or cigars, excep ing by the immediate members of the family livir therein."

The other provides that "not less than two hundre and fifty cubic feet of air space shall be allowed for eac person in any workroom where persons are employe during the hours between six o'clock in the morning ar six o'clock in the evening, and not less than four hundre cubic feet of air space shall be provided for each perso in any workroom where persons are employed betwe six o'clock in the evening and six o'clock in the mor ing."

These laws are excellent, but they are not, and prob bly cannot, be strictly enforced. Offenders, when caugh are fined, and then go back and continue to break th law. The only way to prevent sweating, or at least reduce its evils to a minimum, would be to prohibit th making of garments of any kind in tenement-houses.

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A CLINICAL REPORT OF GALL-BLADDER OPERATIONS.[1]

BY RUFUS B. HALL, M.D.,

CINCINNATI, O.

THE following seven cases comprise all of the gall-bladder operations I have performed, and are reported in the order of their occurrence. I put the cases on record as so much clinical material, to guide us in our future work in this comparatively new operation. I have gained many valuable points in the management of these cases, and hope they will not be uninteresting to you.

CASE I.—Mrs. B——, aged thirty-nine, Cincinnati, O. Patient of Dr. Stevens. Operation was made April 13, 1890, and reported in full in the *Times and Register* of Philadelphia, July 5, 1890, and I will give but a short abstract of the case here. At the time of the operation the patient had been suffering from complete obstruction of the common duct for more than three weeks, and the cholæmia was profound. She was in a dazed condition, listless, and did not appear to notice anything or anyone about her. Pulse, 100; temperature, 97½° F. The liver was enlarged, the lower border was easily defined about four inches below the ribs. She vomited a little glairy mucus every few minutes. The patient appeared to be in a dying condition. Any operative interference seemed to promise nothing but a fatal termination, yet, as it afforded some hope, the friends decided to have the operation made. Upon opening the peritoneal cavity, firm adhesions were encountered with omentum, intestine, and gall-bladder. After these were separated, I could detect several stones in the enlarged gall bladder, which was aspirated and incised. Four gall-stones which were lying loose in the gall-bladder were removed, a fifth stone was found impacted in the common duct and removed. The sinus was closed on the twenty-first day. The patient complained of nausea but little after the third day, and vomited but twice after the operation was made. On the third day she retained liquid food, and on the fifth day she had a ravenous appetite. On the twenty-eighth day she was able to superintend her household duties.

CASE II.—Mrs. F——, aged fifty-two, was seen by me with her physician, Dr. Dorr, at her home near Lower Salem, O., February 16, 1891. For seven or eight years she had suffered from some obscure disease in the region of the liver. That organ was very markedly enlarged during the acute and severe attacks of pain from which she suffered, at irregular intervals, for the past four or five years. The enlargement gradually subsided after the acute attacks were over, yet never entirely disappeared for at least one year before the operation was made. She was under the professional care of several of the best-known physicians in her locality for months before the operation, yet she received little if any benefit other than palliative. Up to five or six weeks before my visit she had never been jaundiced, except for a slight discoloration of the conjunctiva occasionally after the more severe attacks of pain. About five weeks before my visit, after suffering from a severe attack of pain of several days' duration, she gradually developed jaundice, which grew more pronounced from day to day, until at the end of ten days it was profound, which condition remained at the time of my visit. She was markedly emaciated, and examination revealed the fact that the liver was enlarged to a point about three inches below the ribs, and in the region of the gall-bladder could be detected a distinct pear-shaped enlargement the size of a pint-cup, which I believe was the enlarged gall-bladder. My diagnosis was gall-stones with the obstruction of the common duct, and I advised an operation, which, however, was not accepted until two weeks afterward, at which time the patient was in a very bad condition for an operation, with a pulse of 112, temperature 98° F., and vomiting a little mucus every few minutes. She had been unable to retain the blandest food in the stomach for the past ten days.

March 2d she entered my private hospital to have the operation made, which was done the 7th. Present, Drs. Van Meter, Ricketts, and Reed. After the abdomen was opened the gall-bladder was found to be enlarged and to contain a number of gall-stones. After removing twenty ounces of bile with the aspirator, the gall-bladder was incised, and three large stones and several small ones were removed without difficulty. I sought for the obstruction in the common duct, and found a stone, larger than the end of the finger, firmly impacted. I also discovered for the first time a new-growth larger than a walnut, which involved the duct. After the stone was removed I was unable to pass a probe through the duct into the intestine, owing to the obstruction from the new-growth, which proved to be malignant disease of the head of the pancreas. The operation was made in the usual manner, by stitching the opening in the gall-bladder to the abdominal wall and draining it. The wound united perfectly. She had no inflammatory trouble following the operation. The highest temperature was 100° F. She gradually failed in strength, and died from exhaustion the sixth day after the operation. The unfortunate termination of this case is one that must occur if the operation for gall-stones is deferred until after a new-growth develops. There is no doubt in my mind but that the long-continued irritation from the presence of gall-stone in the gall-bladder, and the consequent repeated attacks of hepatitis which so frequently occur, favor the development of malignant disease in or about the gall-ducts. I am aware of the fact that this statement will be challenged; but if we recall the fact that a patient suffering from gall-stone usually gives a history of some obscure hepatic difficulty for years, which gradually grows worse until the operation or death occurs, and an autopsy reveals the fact that the patient not only had gall-stones, but also malignant disease in or about the ducts; and again, if we recall the fact that patients may and usually do live for years after they have developed gall-stone, provided the common duct is not obstructed, we must accept this view. On the other hand, these patients die within a few weeks after the development of malignant disease. Now, with these facts before us it is not a difficult matter to associate cause and effect in the two maladies. If we find that it is a fact that patients suffering from the presence of gall-stone are predisposed to malignant disease, it will be a very forcible argument in favor of an early operation for their removal. It is only necessary for us to trace the cases dying from obscure hepatic diseases and record the diagnosis made at autopsy to be convinced of the frequency of the co-

[1] Read before the American Association of Obstetricians and Gynecologists, St. Louis, Mo., September 20, 1892.

existence of gall-stones and malignant disease about the gall-ducts. Granting the correctness of this assertion, would it not be advisable to make an exploratory incision in all of those chronic cases suffering from obscure hepatic difficulties, where health is destroyed and life endangered, and where a correct diagnosis is otherwise impossible? I, for one, am convinced that this is the correct doctrine. My third case will illustrate this and justify the procedure.

Case III.—Mrs. S——, aged thirty-three, Louistown, Pa., was seen in consultation at her home with her physician, Dr. Harshberger, September 20, 1891. She gave a history of having suffered severe pain in the hepatic region about nine years ago, which was believed by her medical attendant to be hepatic colic. During the following four or five years she had had a number of similar attacks of pain, each one confining her to the bed for a week or more. About five years ago she had another attack, but much more severe, which continued for about five weeks. During this attack she required large doses of morphine several times daily to make her existence tolerable. From this time on she was confined to her room, and a greater part of the time to her bed. If she would attempt to walk about the room the pain would at once return, and it was only a few weeks later that the exertion required to get out of bed would at once cause a terrific attack of pain in the hepatic region. For this reason only she chose to keep her bed rather than endure the pain. After she adopted this plan she had the attacks of pain at intervals of from three to six weeks, these lasting from six to twenty hours, always requiring large doses of morphine for relief. At the time of my visit the patient was emaciated, estimated weight seventy-five pounds, while her former weight had been one hundred and twenty-six pounds. She was afraid to turn herself in bed for fear of bringing on an attack of pain. The skin was clear, no enlargement over the region of the liver or gall-bladder. There was slight tenderness over the locality of the gall-bladder, on very deep pressure. The patient was a martyr from the pain, and was so anxious for anything which promised relief, that I advised an exploration, which was done October 19th, believing we would find gall-stones to be the cause of her pain. Upon opening the abdomen we found the gall-bladder very much contracted. The walls were fully half an inch in thickness, and the cavity would not have held half an ounce but that was packed full of gall-stones, ninety-one in number. One large stone was impacted in the cystic duct, and apparently the duct was closed from inflammatory changes upon both sides of this stone. It was with great difficulty that this could be removed. After making a communication with the gall-bladder by means of a sharp pair of pointed scissors, using them much the same as we would an augur to bore a hole with, until we got down to the stone, we succeeded in breaking it up and removing it in pieces. The patient made a good recovery, and is now free from pain and enjoying most excellent health. The result in this case illustrates the wisdom of exploration in these doubtful cases.

Case IV.—Mrs. F——, aged fifty, Cincinnati, O., has been a sufferer for about one year from some obscure hepatic difficulty, during which time she has had several severe attacks of pain, of two to three weeks' duration, accompanied with an enlargement in the region of the gall-bladder, and slight jaundice. When I first saw the case with her physician, Dr. Berchard, she had been ill for ten days. The liver was enlarged and there was a distinct enlargement over the gall-bladder, with well-marked jaundice. She vomited a little mucus every few minutes, and the pain was so severe that she required morphine several times daily. From the fact that she had been ill for more than a year and was unable to secure relief from the best medical treatment, and had every indication of obstruction of the common duct, I advised an operation, which was at once accepted. The operation was made March 5, 1892; the gall-bladder was very largely distended, but no stones could be detected. After vain efforts to empty the gall-bladder by well-directed pressure, it was found that there was some inflammatory obstruction about the common duct. The gall-bladder was aspirated and emptied. After incising it an effort was made to pass a probe through the duct into the intestine, but it could not be accomplished. The operation was completed in the ordinary way, and the gall-bladder washed with warm water twice daily. On the sixth day a large plug of inspissated bile was washed out, which was believed to come from the common duct, and after that time much less bile came from the gall-bladder. She made a rapid recovery and is now enjoying good health, yet she has a fistulous opening which discharges a very small quantity of bile, but this does not appear to interfere with her general health The stools are of the natural color, and she has regained her usual weight and strength.

Case V.—Mrs. R——, Covington, O., aged thirty-nine, had been subject to sudden and severe attacks of pain in the hepatic region for seven or eight years, and a number of times had a distinct enlargement in the region of the gall-bladder during, and after, attacks of pain. Nine weeks before my first visit, June 11, 1892, after a severe attack of several days' duration, she became jaundiced, and remained so until the time of my visit, when the cholæmia was extreme. The patient was in a dazed condition and did not notice anyone about her unless spoken to; the pulse was 128, temperature, 98° F. The liver was enlarged, the lower border was easily defined about three inches below the ribs. A distinct enlargement could be made out to the right of the liver, which was supposed to be the gall-bladder. She vomited some mucus every little while. A diagnosis of obstruction of the common duct was made, and an operation was advised. This was done at the patient's home, June 15, 1892, with the assistance of Drs. Harrison, Schoffield, Templeton, of Covington, and Frame, of Piqua, O. When the abdomen was opened the gall-bladder was found to be largely distended and containing a number of gall-stones. It was aspirated and incised, and seventy-five gall-stones, varying in size from that of a pea to a cherry, were removed. The cause of the obstruction was found to be a stone in the common duct, which could not be removed through the gall-bladder or pressed on into the intestine, owing to some inflammatory exudation. It was plainly evident that to leave the stone would leave the common duct obstructed for all time, and that there would constantly be a fistulous opening if the patient recovered; therefore I removed it by incising the common duct. Before this could be done, however, I was obliged to enlarge the abdominal incision, which I did by extending it upward and to the left, along the border of the ribs, to a point a little past the median line, making a kind of a flap of the abdominal wall. With this turned back we had ample room for work, and the duct was incised and the stone removed. I at once closed the opening in the duct with catgut suture, and packed a strip of gauze under and around the duct, bringing the end out at the upper part of the wound, where three stitches were left untied. The gall-bladder was stitched to the abdominal wound in the usual manner, and drained The patient remained in the same dazed condition as before the operation, with no indication of improvement. She had no rise of temperature, and died from exhaustion June 17th, fifty-three hours after the operation. I do not think the incision into the common duct made her chances for recovery any less, as there was no leakage from it. But the fatal error was that the operation was deferred until the patient was in a dying condition. Here again we see the necessity of an exploratory incision in these obscure hepatic difficulties. This patient had been a subject of gall-stones for years, and if she had been operated upon before the common duct was obstructed, while she was yet in good physical condition, before the profound cholæmia of her last illness, I have but little doubt that she

would have recovered. With the light of my present experience, I would hesitate to operate upon any patient who had suffered from complete obstruction of the common duct for so long a period of time. The powers of recuperation are so feeble that we can hardly hope for other than a fatal termination.

Case VI.—Miss H——, aged twenty-four, sick for twenty months with indigestion and pain in the region of the stomach and liver. Three weeks before my first visit she went to bed with some form of continued fever, which her physician, Dr. Juettner, of this city, could not define. She grew gradually worse, with a fluctuating temperature and pulse. On the day preceding my visit her physician discovered a swelling in the region of the gall-bladder, which was exceedingly sensitive to pressure. On June 18, 1892, I saw the case with her physician. She had a pulse of 120; temperature, 103° F. The liver was enlarged, and there was a distinct swelling in the region of the gall-bladder, but she had no jaundice. I had no hesitation in pronouncing the swelling to be the distended gall-bladder, with probably suppuration, and advised an operation at once. The patient was sent to the Presbyterian Hospital, where I performed the operation the following morning, removing sixteen ounces of pus and thirteen gall-stones from the gall-bladder, the largest of which was firmly impacted in the cystic duct. The patient recovered without incident, and went home twenty-six days after the operation.

Case VII.—Mrs. B——, aged forty-two, Bainbridge, O., referred to me by her physician, Dr. McKee, July 12, 1892, with the following history: Twenty years ago she had a severe attack of pain in the region of the liver, which continued for forty-eight hours; this was repeated on two subsequent occasions, at intervals of about one year each. After that time she had only slight uneasy sensation in the right side and stomach until fourteen years ago, when she suffered from the fourth severe attack of pain, which continued for several days. After this attack she was rarely free from pain for a week at a time, yet she had only a few very severe attacks until five years ago. But for the past five years she has been under the care of her physician most of the time. For more than a year before she came to me, there had been a distinct enlargement to the right of the enlarged liver. She suffered terrific attacks of pain brought on by the least exertion. I had no hesitation in pronouncing the case one of gall-stone, and advised an operation, which was done at my private hospital July 15th, and three stones as large as the first joint of a man's thumb, and one hundred and thirty-five stones varying in size from a grain of wheat to a bean, were removed. The patient developed a severe hepatitis after the operation, and on the fourth and fifth days was alarmingly ill, but after that she made an easy and complete recovery.

The cases reported are duplicates of hundreds of patients suffering from obscure pain in the hepatic region. It will only be necessary to demonstrate to the profession at large the importance of operation upon these chronic cases before the common duct is obstructed, to gain their co-operation, and thus save years of untold suffering and many valuable lives, which would otherwise be lost. If all of the cases operated upon where the common duct was obstructed could be tabulated, the mortality would probably be very great. On the other hand, after operation for gall-stones where the common duct is not obstructed, the mortality is not more than two or three per cent. in the hands of men prepared to do this work. These facts alone, if no other could be advanced should be sufficient to warrant early operations, and, if the theory be correct that the long-continued irritation of pent-up gall-stones acts as an exciting or predisposing cause of malignant disease, in or about the gall-ducts, this is the greatest reason of all for advising exploration in all doubtful and obscure cases of chronic hepatic difficulties, and early exploration in all cases of distended gall-bladder.

15 West Eighth Street.

FIFTY SELECTED CASES FROM THE PRACTICE OF DR. CLEMENT CLEVELAND AT THE WOMAN'S HOSPITAL OF THE STATE OF NEW YORK.

By LeRoy Broun, M.D.,

Assistant Surgeon to the Woman's Hospital, New York.

These cases have been selected from the practice of Dr. Cleveland at the Woman's Hospital, and the object of bringing them together is that the majority are of interest and, to the writer at least, instructive. Before taking up the several classes a *résumé* of the general technique carried out will be given in brief. This has necessarily varied in the last two years; that as exercised at present is as follows:

Cleansing Abdomen.—This is done thoroughly the night before the operation, if possible, and a wet bichloride towel or gauze kept on over night. At the time of the operation it is cleansed again with soap and water, then with ether and alcohol, and finally with bichloride solution. In vaginal operations the vagina is thoroughly scrubbed with soap and a soft brush, irrigated with water and afterward with a bichloride solution.

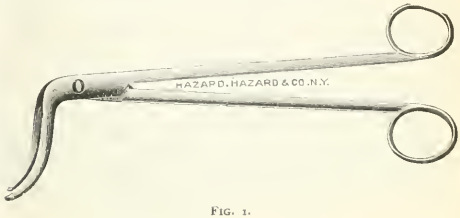

Fig. 1.

The Hands.—It has been determined that after immersion in a strong bichloride solution the scrapings from under the nails would yet yield bacteriological cultures. After immersion in a saturated solution of permanganate

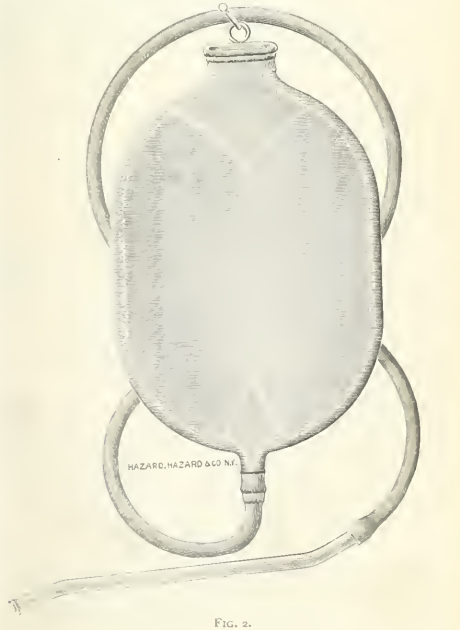

Fig. 2.

of potash and a subsequent bleaching by oxalic acid, the scrapings were sterile. Since this determination it has been the habit of Dr. Cleveland to require all con-

cerned in the operation to exercise this rigid care in cleansing.

Towels, Gowns, etc.—These are all sterilized for one hour before operation. In private practice, when this cannot be done, the towels are wet in bichloride solution 1 to 1,000.

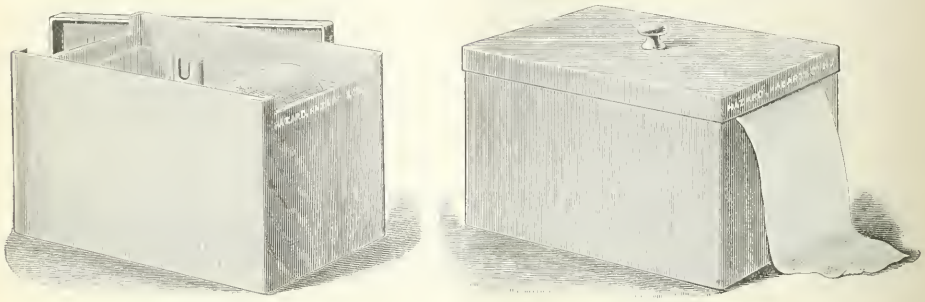

Fig. 3.

Ligature Passer.—For tying off pedicles and transfixing stumps a forceps devised by Dr. Cleveland is in use. This is illustrated in Fig. 1.

Being pushed through the pedicle it is slightly opened; the ligature, held by an assistant, is grasped and the instrument pulled back, or *vice versa*. For ease of handling and rapidity of work it is much superior to the aneurism needle ordinarily used for such purposes.

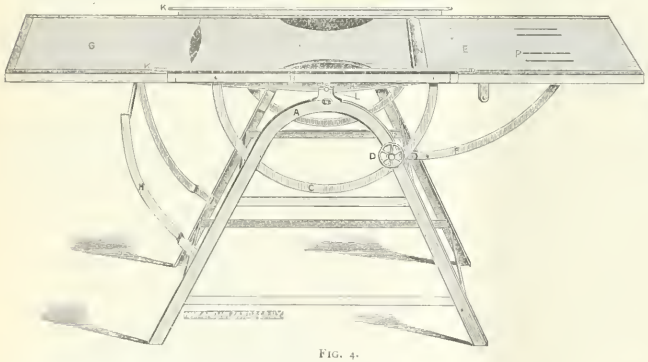

Fig. 4.

Irrigator.—For use in private practice I have had made by the Alpha Company a rubber bag of one gallon capacity, with a half inch outlet. This, together with its accompanying tube, is always boiled before use. Fig. 2 gives the irrigator and glass tube attached. The engraver has by some mishap represented the wrong end of the glass tube inserted into the tubing.

Sterilized Gauze.—For furnishing sterilized gauze for peritoneal drainage, or vaginal packing after a hysterectomy, this box, as shown in Fig. 3, was devised by the writer especially for use in private practice. It is made of block tin, is 6 inches long, $3\frac{1}{2}$ inches wide, and $3\frac{1}{2}$ inches deep. It is provided with a snugly-fitting top of the same material. From each end there is cut a slot wide enough to allow a two and a half inch strip of gauze to pass through freely. Inside is placed a smaller metal case so arranged as to support two glass rods, over which each roll of gauze revolves. In using this box the gauze rolls, which have been previously prepared, are put in place, the cover placed on, and the whole sterilized for one hour. It is then wrapped in towels which were sterilized at the same time. Thus protected the box is not disturbed until desired for use during the operation.

In this way the gauze is not touched except at the operation, and then only by the operator. Again its atmosphere is practically sterile until needed. If iodoform gauze is used care should be taken that the free ends of the rolls do not lie upon the bottom of the box, for if they do this part will be changed to the blue color due to the decomposition of the iodoform.

Operating Table.—For the last year there has been in use a table devised by Dr. Cleveland, its object being to furnish Trendelenberg's position whenever desired.

The cuts of the table as here shown and its rapid sale by the maker will render an explanation of its working almost useless, yet a few words as to some of its special features will not be amiss. When the table is thrown into the inclined position (Figs. 4 and 5), the knees are elevated by the foot-piece above the plane of the abdomen. In this position the recti and psoas muscles are relaxed and work is facilitated.

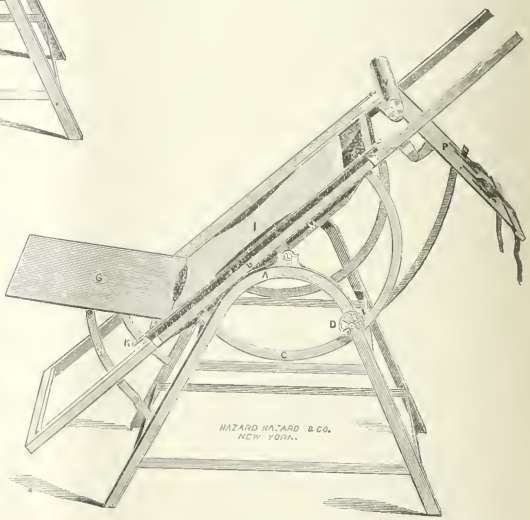

Fig. 5.

The table is made of angle iron and is as light as is compatible with strength. The top can be moved from its frame with ease, and, being in sections, can be readily cleaned.

Ligatures.—For the last two years a large catgut, No. 6 to 8, has been used for tying off pedicles and has given excellent satisfaction. This is rendered sterile by immersing the raw gut for one hour in ether to free it of its oil, then for twenty-four hours in a watery bichloride solution, 1 to 1,000. It is then kept in pure alcohol which is changed until the gut is hardened. Thus prepared the gut has given no cultures even from its centre.

Catheterization.—It is the experience of all who had the after-care of operative cases to be much annoyed by vesical irritation and a possible cystitis following the careless use of the soft-rubber catheter. For the last two years this has been reduced to a minimum by the use of a glass catheter, which is kept scrupulously clean by boiling and being kept in bichloride solution. Before its use the vulva is thoroughly washed off with warm water and afterward with a weak bichloride solution. The catheter first in use was one with a closed end and side holes. After some time a sediment was always found at the closed end. This was difficult to remove. To remedy this a catheter as represented in Fig. 7 is now in use and gives excellent satisfaction.

These I have had made by Emil Greiner, of 146 William Street, at a cost of about six cents a piece.

Cysts.—The location of these cysts bear out, in an interesting manner, the fact established that it is more frequent that the right side is affected. Out of 349 cases collected by Safford Lee and others 173 were upon the right side and 126 on the left. Of these cases reported—putting aside four, of which two were double, and two of broad ligament origin—we have eight as recurring on the right side and four on the left.

FIG. 6.

Cysts.

No.	Date.	Name.	Age.	Social condition.	Nature of cyst.	Adhesions.	Recovered.	Died.	Pathological report.
1	February 24, 1890.	Mrs. H. T.	31	Married.	Ovarian cyst of left side.	To parietal peritoneum and intestines.	Yes.	....	Monocular cyst.
2	April 21, 1890.	Mrs. E. B.	24	Married.	Ovarian, right side.	.....	Yes.	...	Multilocular cyst, seventy centimetres circumference.
3	September 22, 1890.	Miss J. F.	23	Single.	Cyst of broad ligament.	.....	Yes.		
4	October 6, 1890.	Mrs. M. L.	30	Married.	Ovarian, right side.	.....	Yes.		
5	October 13, 1890.	Miss K. K.	48	Single.	Ovarian, right side.	.....	Yes.	....	Multilocular cyst.
6	November 3, 1890.	Mrs. A. J.	34	Married.	Ovarian, right side.	.....	Yes.	...	Monocular cyst.
7	May 11, 1891.	Mrs. L.	31	Married.	Cyst of broad ligament.	.....	Yes.		
8	October 14, 1891.	Mrs. M. R.	77	Married.	Ovarian, double; larger of left ovary.	.....	Yes.		
9	October 24, 1891.	Mrs. H. P.	47	Married.	Ovarian, right.	.....	Yes.	....	Cyst adenoma.
10	January 30, 1892.	Miss E. F.	23	Single.	Ovarian, right side.	.....	Yes.	....	Multilocular cyst.
11	February 1, 1892.	Miss K. F.	43	Single.	Ovarian, left side.	.....	Yes.	....	Multilocular cyst.
12	May 9, 1892.	Mrs. K.	38	Married.	Ovarian, right side.	.....	Yes.		
13	February 9, 1891.	Mrs. I. S.	32	Married.	Ovarian, double; larger left side.	.....	Yes.	....	Multilocular cyst.
14	.....	Mrs. R. G.	37	Married.	Suppurating cyst of right ovary; tubercular salpingitis left.	.....	Yes.	...	Tubercular salpingitis confined to mucous membrane of tube; ovarian cyst with suppurating wall.
15	June 3.	Mrs. G.	42	Married.	Papillary cyst, left.	Slight.	Yes.	....	Section through cyst-wall shows interior of wall well covered with papillary growths.
16	June 7.	Mrs. A. H.	48	Married.	Cyst of left ovary.	None.	Yes.	...	Diagnosis, unilocular papillary cyst of the ovary.

Age.—The time of life among these patients is that in which we generally expect to find cystic development. The advanced age of one, Mrs. M. R——, is unusual. She presented herself for operation at the age of seventy-seven. Both ovaries had been transformed into cysts, of which the left was predominant. Her recovery from the operation was uneventful. Three weeks after she contracted a double pneumonia and died.

Menstruation.—This function, where the menopause had not already come about, was, when disturbed, increased in amount rather than otherwise. With four of the cases the cysts were first noticed after the menopause, with three menstruation was in no way disturbed. With three others the time of the flow was increased and with one of them constant. In the instance of the first mentioned patient in this list the menstrual history is of especial interest. At the operation in September, 1890, a large cyst of the left side was removed. The right ovary and tube being normal was not disturbed. She is now in the hospital for the removal of a large cyst of the remaining ovary (right). Her menstruation at the time of the existence of the first cyst was of the twenty-eight day type and nine days' duration. For the last two years it has not been disturbed; evidently the ovarian tissue was not all obliterated by the large cyst of the remaining ovary. At the section, done the day of this writing, the stump of the former operation was raised up and examined with care. No remains of the silk ligature used existed. A small cicatrix of slightly darker hue than that of the surrounding parts was all that remained of where the ligature once existed.

Mural Abscess.—One of the patients (Case VI.) had a mural abscess following the removal of a soiled stitch. This healed promptly. She returned a year later for the closure of a ventral hernia over the spot. In the instance

of the case last upon the list, the interior of the cyst-wall was covered with small papillary growths. Some of the contents escaped during its removal into the general peritoneal cavity; this was removed as much as possible by irrigation. The patient is being watched with care for any secondary growths that may spring up from this escape of fluid.

Pyosalpinx.—Case I. was a sub-peritoneal abscess, probably from a breaking down hematocele, if such exists. It had been discharging into the rectum for some weeks. Its contents were evacuated by a trocar and its cavity well washed out. The edges of the sac were stitched to the abdominal wound and drainage established by tube and gauze. The rectal opening closed and gradually the sinus was obliterated.

Ventral Fixations.

No.	Date.	Name.	Age.	Social condition.	Local condition.	Method of operation.	Drain.	Recovered.	Died.	Pathological report.
1	November 22, 1889.	Miss K. F.	32	Single.	Retroflexion, fixation; catarrhal salpingitis and follicular cysts.	Salpingo-oöphorectomy. Uterus fixed anteriorly, one stout silk ligature passing through abdominal wall and body of uterus.	....	Yes.	....	Catarrhal salpingitis; follicular cysts.
2	February 10, 1890.	Mrs. M. B.	32	Married.	Complete procidentia; chronic salpingitis.	Salpingo-oöphorectomy. Uterus fixed anteriorly, buried silk sutures taking in fascia, peritoneum, and adjacent stump and horn of uterus.	....	Yes.	....	Chronic ovaritis and hyperplasia tubes.
3	March 31, 1890.	Mrs. C. D.	36	Married.	Retroversion; fixation; salpingo-oöphoritis, chronic.	As in Case No. 2.	....	Yes.	....	Chronic ovaritis with follicular cysts.
4	October 23, 1891.	Miss L. M.	39	Single.	Retroversion; fixation; hæmatoma, both ovaries; chronic salpingitis.	Salpingo-oöphorectomy. Ventral fixation as above, No. 2.	....	Yes.	....	Both ovaries converted into single cysts, into which had been hemorrhage, tubes, hyperplasia, and catarrhal salpingitis.
5	.....	Miss A. C.	30	Single.	Retroversion; fixation; large uterus.	Catgut used as ligature, being passd through ovarian ligament and adjacent fascia and peritoneum.[1]	....	Yes.		
6	February 13, 1892.	Miss M. R.	19	Single.	Retroversion; fixation; cystic left ovary.	Removal of diseased ovary and tube, left. Body of uterus scarified anteriorly. Sutures, two, passed through abdominal wall and body of uterus.	....	Yes.	....	Chronic ovaritis, with follicular cysts; tube hyperplasia with catarrhal salpingitis.

[1] Done by Dr. Klitzsch.

Ventral Fixations.—Some of these cases are of too recent a date to speak with any definite assurance of the result, yet all have been relieved of the symptoms for which the operation was done. The first four cases have been seen within the last month, and in each the uterus was in position, and the patient relieved of her pressure symptoms. The method used in the last case is the one most preferred by Dr. Cleveland; certainly by it a large area of coaptation is obtained between the uterus and the parietal peritoneum. When the appendages have been removed it was on account of a cystic degeneration of the ovaries, together with a thickening of the tubes.

Case II. is of interest in exemplifying how at times it is difficult to map out tubal trouble. She was a strong German working-woman, in excellent health to all appearance; she complained constantly of pelvic pains. The local condition gave only a retro-displaced uterus partially held by a few firm bands. Not being able to retain the organ in position by a pessary ventral fixation was suggested. She was under treatment for two months before the abdominal fixation was considered. During this time she was seen four or five times a week by the visiting surgeon or house surgeon. Before the operation was done she was examined by two other surgeons, as is the custom,

Pyosalpinx.

No.	Date.	Name.	Age.	Social condition.	Local condition and operation.	Drain.	Recovered.	Died.	Pathological report.
1	November 25, 1889.	Mrs. A. C.	29	Married.	Edges of sac stitched to abdominal wound.	Yes.	Yes.		
2	December 2, 1889.	Miss M. K.	22	Single.	Double. Removal of both.	.....	Yes.	.....	Chronic suppurative salpingitis.
3	December 20, 1889.	Mrs. E. H.	29	Married.	Double. Removal of both.	Yes.	.....	Yes; April 24, 1890.	Suppurating salpingitis. Measurements: larger tube, 14 ctm. long, 7 ctm. thick, and 6½ ctm. wide; larger end, 21 ctm.; smaller end, 17 ctm.; longitudinal circumference, 32 ctm. No gonococci. The smaller one was too thin walled to distend for measurement.
4	January 31, 1890.	Miss C. J.	19	Single.	Double; gonorrhœal. Removal.	.....	Yes.		
5	November 29, 1889.	Mrs. K. S.	31	Married.	Double. Removal of both.	.....	Yes.		
6	February 17, 1890.	Mrs. A. R.	23	Married.	Pyosalpinx and cyst of one ovary.	.....	Yes.	.....	Chronic ovaritis with small amount of ovarian tissue remaining. Tubes show hyperplasia, and distal end of one is infiltrated with pus.
7	February 23, 1891.	Mrs. S.	..	Married.	Pyosalpinx; double.	.....	Yes.	.....	Suppurating salpingitis.
8	March 9, 1891.	Miss C. G.	21	Single.	Pyosalpinx, left, and intraligamentous cyst, left. Removal and resection of five inches of intestine.	Gauze and tube.	Yes.		
9	May 21, 1891.	Mrs. P. D.	31	Married.	Pyosalpinx; double. Removal.	Yes.	.....	Yes.	Suppurating double salpingitis with suppurating ovarian cysts.
10	January 9, 1892.	Mrs. L. S.	26	Married.	Pyosalpinx, left. Removal.	Yes.	Yes.		
11	February 6, 1892.	Mrs. M. B.	22	Married.	Pyosalpinx; retroversion; fixation. Removal.	....	Yes.	.....	Left: ovary a thin walled cyst; tube, suppurating salpingitis. Right: advanced chronic ovaritis; tube, marked hyperplasia of uterine end with catarrhal salpingitis. *a.* Suppurating ovaritis with suppurating salpingitis. *b.* Chronic ovaritis with hyperplasia and catarrhal salpingitis; small parovarian cyst.
12	February 8, 1892.	Mrs. M. M.	38	Married.	Abscess of ovary; pyosalpinx; parovarian cyst. Removal.	.....	Yes.		

and in no case was any condition excepting a retroverted uterus, partially fixed, discovered. The operation gave this condition with both tubes much distended with pus. These were high up and out of reach of the vaginal finger. The woman being full fleshed and the abdomen tense they could not be detected by the external hand.

Case III.—This case is remarkable for the immense size of the tubes. The measurements are given under the pathological report. Her recovery was uninterrupted as concerned the immediate operation. The cause of death was exhaustion from an abscess around the pedicle.

Case IV.—This case shows in a clear manner how rapid gonorrhœal infection can be. The patient contracted the disease about Christmas, 1889. She was admitted to the hospital January 2d, when, in addition to the severe vaginitis, tubal distention had already begun.

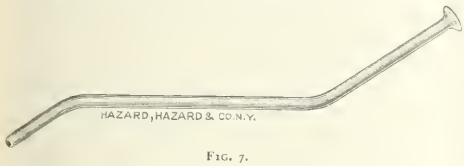

Fig. 7.

Case VIII.—Here the adhesions were of such a dense character that it was with considerable difficulty the cyst and diseased appendix could be liberated. The tube was attached to the sigmoid flexure and in liberating an angular rent was made in the gut an inch and a quarter long. The serous covering was also stripped up for five inches. The injured portion had such an unhealthy appearance that it was thought wise to resect the five inches and do a circular enterorrhaphy. This was done, iron-dyed silk being used. The cavity was then packed with gauze, bringing it up through the abdomen for drainage. Morphine was used to quiet peristalsis, and no movement of bowels until the eighth day allowed. Recovery was uninterrupted, a sinus being left which healed at an early date.

Case IX.—When this patient was admitted to Dr. Cleveland's service the entire pelvis was filled up with an unyielding exudation. She was having a nightly rise of temperature of one or two degrees. At one time while in this condition the temperature reached 107° F. Since nothing could be done by operation, thirty grains of calomel was given, with the happy effect of the temperature falling to almost normal and remaining so for about a week. The local condition was also much improved. The exudation clearing up to a considerable extent, an effort was made to remove the purulent foci. Adhesions were dense. These were broken, and distended tubes on both sides were removed with their ovaries. The pelvis was packed with gauze for drainage. The patient did well. She was seen the second night with a good strong pulse. She died a few hours after. No autopsy was allowed, and the cause of death was not known.

The other cases reported here are of interest in various ways. Taking them as a class, wherever drainage has been necessary gauze has been used packed in a solid column from the bottom of the pelvis into the abdominal wound. Where intractable sinuses have been left they have been, where feasible, opened into the vagina by means of a trocar and cannula, and after establishment of drainage they have closed without trouble.

Unclassified Cases.—Case I.—It was much regretted that this specimen was lost, for of its benign or malignant character nothing can be said. These solid tumors of the ovary are generally malignant. Those of a myomatous type being rare. Doran states that he has never seen a pure fibro-myoma of the ovary removed, but finds one in the museum of the Royal College of Surgeons. Tait states that he removed four, and gives some data from other writers.

Unclassified Cases.

No.	Date.	Name.	Age.	Social condition	Disease.	Operation.	Drain.	Recovered.	Died.	Pathological report.
1	October 21, 1889.	Miss M. B.	29	Single.	Solid tumor of right ovary.	Removal.	....	Yes.	....	Specimen lost.
2	March 21, 1892.	Mrs. G.	26	Married.	Fibro-adenoma of parovarium.	Removal.	....	Yes.	....	Fibro-adenoma of parovarium.
3	February 10, 1890.	Mrs. B. R.	27	Married.	Hydrosalpinx right side.	Removal of both appendages, the left tube being thickened and ovary with follicular cysts.	....	Yes.	....	The hydrosalpinx of right tube measures 5½ ctm. longest diameter, and 3¼ ctm. shortest diameter.
4	March 16, 1892.	Mr. W.	23	Married.	Hydrosalpinx, double.	Removal of both; left ovary was allowed to remain.	...	Yes.		
5	March 2, 1891.	Mrs. M. B.	..	.....	Tubercular peritonitis.	Opening and drainage.	Yes.	Yes.		
6	.....	Mrs. B.	22	Married.	Tubercular peritonitis.	Opening without drainage.	....	Yes.		
7	May 20, 1891.	Mrs. M. H.	38	Married.	Umbilical hernia; adhesions; irreducible.	Dissection anteriorly and removal of adherent omentum.	....	Yes.		
8	October, 1892.	Mrs. A. J.	34	Married.	Ventral hernia, as result of mural abscess following section one year ago.	Closure by method suggested by Dr. Pryor.	....	Yes.		
9	May 18, 1891.	Mrs. M. K.	26	Married.	Pyonephrosis.	Lumbar opening and evacuation of pus.	....	Yes.		
10	November 15, 1888.	Mrs. E. D.	28	Single.	Pyonephrosis, large.	Abdominal section; evacuation through trocar and stitching of sac to abdominal wall.	....	Yes.		
11	December 7, 1891.	Mrs. H. M.	31	Married.	Cystic papilloma of mesentery; ascites.	Exploratory and removal of portion for diagnostic purposes.	....	...	Yes.	Cystic papilloma of omentum.
12	January 18, 1892.	Miss A.	29	Single.	Papilloma, both ovaries.	Removal.	....	Yes.	....	Papilloma of both ovaries, each mass springing from its ovary by three distinct fibrous pedicles. See fuller report in remarks.
13	January 9, 1891.	Miss D.	55	Single.	Fibroid in folds of left broad ligament.	Enucleation with hysterectomy.	....	....	Yes, 9 days after.	
14	November 30, 1891.	Miss S. M.	30	Single.	Mass to right of uterus.	Exploratory operation; mass proved to be a pedunculated fibroid.	....	Yes.		
15	April 18, 1892.	Mrs. C.	44	Married.	Adhesions.	Section; few broken up; closure.	....	Yes.		
16	January 12, 1891.	Mrs. L. J.	29	Married.	Varicocele of right broad ligament.	Section; removal of both appendages with ligature of pampiniform plexus.	....	Yes.	....	One ovary converted into a cyst filled with blood, the other having a small number of cysts. Tubes, catarrhal salpingitis.
17	June 8, 1892.	Mrs. H.	34	Married.	Tubal pregnancy.	Removal of sac and blood-clots.	Yes.	Yes.		

Case II.—This case is of unusual interest on account of the rare occurrence of such a condition. Her history, given in brief, is one of uncontrollable menorrhagia. She was curetted at various times without any diminution in the amount of the flow. The presence of the solid tumor of the right side was always recognized, yet its removal put aside as a last resort. There was no ascitic fluid in the cavity. The part of the annexa involved its fibro-adenomatous character, the absence of any fibroid growths in connection with the uterus, with absence of ascites, makes this case one of marked interest. I have not been able to find in the literature consulted a statement of a similar occurrence. I give the entire pathological report of Dr. George C. Freeborn, pathologist of the hospital, and by whom examinations of all the other specimens in this report have been made.

Macroscopic.—The ovary is a semi-ovoid shaped mass 7½ ctm. in its long diameter and 6 ctm. in its shorter. Section shows a solid white tumor enclosed in a thin, fibrous capsule. At the outer and lower end of the tumor is a semilunar-shaped mass, 3 ctm. long and 1½ ctm. thick, composed of tissue resembling that of the ovary. The elongated tube is attached to the upper surface of the mass.

Microscopic.—Shows compressed ovary attached to one side of the tumor, and separated from it by a thin layer of fibrous nature. The tumor proved to be a fibro-adenoma of the parovarium.

Cases III. and VI. were of the typical tubercular class with the characteristic nodules scattered over the viscera; one was treated with drainage, the other without. The one without drainage has been of such recent date that nothing can be said definitely as to the result. She will be watched with interest to know whether there will be a recurrence of the effusion. The reason of omitting drainage in this case was the presence of a tuberculous spot in the apex of one lung.

Case VII.—This case was operated on for a cure of the hernia at her earnest request. It was of omental character which was closely adherent through the entire circumference of the ring which was of a hard cartilaginous nature. That portion of omentum protruding through this cicatricial umbilical opening was a mass of small fibrous nodules, probably inflammatory in origin, scattered through what remained of the omental tissue.

Case VIII.—This case is chiefly of interest in that the hernia followed a mural abscess of one year before, at which time she was in the hospital for the removal of an ovarian cyst. The hernia was closed after the method suggested by Dr. Pryor for closure of the abdominal wound following laparotomy, that is, the peritoneum and transversalis fascia were brought together by fine catgut, the muscle and its sheath by an independent layer of sutures of fine silk, and the remaining portion allowed to granulate up.

Cases IX. and X.—These cases are examples of conservatism, both abscesses of the pelvis of the kidney, in both opening and drainage, one by the abdomen and afterward a counter-opening made in the side, the other in the lumbar region. Both recovered, and are in excellent health.

It is true that in both cases the recovery was prolonged and required watchful care, yet they recovered, which is by no means so certain if the kidney had been removed in both cases. In general it is recognized that the history of these cases is that the affected kidney atrophies and ceases to excrete urine, hence there is no cause to look for a recurrence. The cause of the abscess was not found in either case.

Case XI.—This case is of unusual interest, as it appears to mark the extension of a cystic papilloma from the ovaries and tubes to the omentum. The patient was enormously distended, and was becoming more so rapidly. The diagnosis of ascites with malignancy was made. Laparotomy, ascitic fluid liberated. The omentum was converted into a mass of small cysts, varying in size from a pea to that of a walnut. It was adherent to the pubic arch, uterus, and intestines. Both ovaries were cystic and both tubes enormously distended. The cysts were filled with a clear fluid. A portion of the omentum was cut away for diagnostic purposes.

Pathological report, cystic papilloma of omentum. The patient died soon after operation, of exhaustion.

Dr. Cleveland tells me that it is the opinion of the pathologist that the disease undoubtedly started in the ovary and extended from there to the omentum and tube.

Case XII.—This, one of papilloma of both ovaries, shows, in a beautiful manner, the proliferation of this new growth, and in describing the case I draw from the report of Dr. Cleveland before the Obstetrical Society and the discussion following. Speaking of the operation he says:

"When the ascitic fluid was withdrawn the cavity was fairly opened, and an ovarian cyst surrounded by a papillomatous growth was found on either side. In removing the mass from the left side much difficulty was experienced from the dense mass of adhesions that held it down. After its removal examination disclosed the peritoneum at the bottom of the pelvic cavity covered with small projections that felt like small shot adhering to the surface. This was the only spot in the whole abdominal cavity which showed the extension of the disease beyond the ovaries. The whole pelvic cavity at this point was a vast oozing surface, and was packed with a solid column of gauze—over twenty yards being used—not merely to stop the oozing, but in the hopes that in some way it might limit the disease or shut it off from the general abdominal cavity; that possibly the pressure alone would not only stop the bleeding but check the proliferation that had evidently commenced on the peritoneal surface at this point."

At this writing Dr. Cleveland tells me that he has seen this patient within the last few days. She is in excellent health, having gained flesh, and there is no recurrence of her trouble. He is of the opinion that when met with at such an early stage, papilloma lacks that malignancy of which it partakes later. Either this, or clinically, there are two classes of these growths, one more malignant than the other.

Pathological Report.—The right cyst is thin-walled and grows from one side of the ovary. Projecting into the interior of the cyst from one side is a lobulated cauliflower-like mass which appears to be connected with a similar mass on the outside of the cyst-wall. The remains of the ovary is imbedded in the mass of new growth. This growth springs from the ovary by three distinct fibrous pedicles forming three distinct lobules.

The left is an irregular trilobed cauliflower mass. Longitudinal section shows an elongated ovary imbedded in the centre of the mass. The new growth springs from the ovary by three distinct pedicles.

Case XIII.—This case is one of a fibroid the size of a fœtal head in the folds of the left broad ligament. The mass was entirely independent of the uterus in a capsule of its own. Doran and Pozzi both state that these may come originally from the uterus and afterward become independent; or may develop *de novo* within the folds of the ligament.

This case calls to mind a similar one occurring in the private practice of Dr. Cleveland and not reported here, where the tumor was within the folds of the ligament and entirely separate from the uterus, being easily shelled out. This was a fibro-myoma as reported by the pathologist. Neither in the case reported nor in the other were there any fibroids connected with the uterus.

It was found necessary to remove the uterus with the tumor. The patient died on the ninth day of sepsis, doing well up to the seventh.

Case XIV.—This case is reported on account of such a condition introducing a possible error in the diagnosis of even a skilled diagnostician. This mass to the right of

the uterus was made out distinct from the uterus and not moving with it. The history of a pyosalpinx was made out. The mass was sensitive to touch.

Laparotomy. Mass proved to be a pedunculated fibroid. Not removed and abdomen closed.

Case XVI.—This case is of interest on account of prompt relief given by operation and history. She was in perfect health with no pain at menstruation up to five months before operation. At this time while menstruating she experienced a sharp pain over the left side, attended by sudden cessation. The pain lasted for one week and was very severe. With each following period she experienced such pain for the week before the advent of the flow that only large doses of morphia would relieve her. The flow established, all pain would vanish.

She passed the November period in the hospital and I saw that she suffered excessively. At other times she was perfectly quiet. The varicose condition being relieved and nothing abnormal found she was discharged.

December 7th she again entered the hospital, begging for an operation and saying that the pain was as severe as before.

Laparotomy. Removal of appendages.

Pathological Report (*abbreviated*).—One ovary converted into a cyst filled with blood, the other having a number of small blood-cysts.

Tubes, catarrhal salpingitis. Here we have an apoplexy, so to speak, of both ovaries. It seems to me that her intense pain before the period and relief when it was established is explained by this data—on the ground of the extra congestion of and pressure from within upon these organs before the period and relief from this at the period.

She was thoroughly relieved by the operation.

THE SURGICAL TREATMENT OF ACUTE ARTHRITIS OF THE HIP IN INFANTS.[1]

With Presentation of Two Cases Fully Recovered.

By VIRGIL P. GIBNEY, M.D.,

New York.

A few days ago, at the request of Dr. Bull, who was billed for a paper on this occasion, I consented to present a short paper, as it was impossible for him to keep his appointment this evening. I gave the Secretary the above title in order to bring out in striking relief what I considered to be the best treatment of acute arthritis of the hip in infants.

The subject of acute arthritis has been treated by various authors, such as Terrisse in France, T. Smith in London, Barwell, Krause, Macnamara, Wright, Howard Marsh, W. R. Townsend, and the reader of the present communication.

My own observations extend over a period of twelve or fifteen years, but it is only in recent years that I have felt equal to the proper management of the case so that life might be saved and deformity prevented. The disease is essentially one of early life, occurring during the first twelve months of life as a rule, is very active in its progress, is destructive of the structures immediately entering into the formation of the joint, and often of the bony structures. It is caused by one of the forms of staphylococci. The mortality is about fifty per cent. Where recovery does take place, the rule is to have a weak, flail-like joint, and it is not uncommon to find conditions very similar to that of congenital dislocation of the hip. From one of the more recent papers on this subject, by Dr. W. R. Townsend, and published in the "Transactions of the American Orthopedic Association for 1889," I have taken all the cases wherein the hips were involved, and of seventy-one cases in his table, thirty-three affected the hip-joint or joints. Of these thirty-three seventeen are reported as dying from the disease, sixteen as recovering.

The stereotyped method of treatment formerly was to incise the abscess, drain, and get healing as quickly as possible. The sixteen cases that recovered did not all recover with perfect joints. I am at a loss, this evening, to state just how many of this number did recover with perfect joints, but my impression is that the number is very small.

The cases I have to present this evening show unusually good results, I think, for clinic cases, and I believe a good functional result is due to the care taken in immobilizing the parts during the reparative process and maintaining all the time the parallelism and equal length of the limbs. The reports are as follows:

Case I.—Ida L——, aged ten months, presented at my clinic on May 28, 1892, suffering from an acute abscess which completely encircled the left hip. The child was greatly emaciated, suffered intensely, and was exceedingly irritable. The father's name was H—— L——, living in Madison Street, first floor front.

Ether was given, the abscess completely opened, front and back, thick cheesy material, containing a lot of pus, two ounces in quantity, removed, the finger inserted and joint found to be not involved. It was, therefore, a periarticular abscess. The cavity was curetted, washed thoroughly with sublimate, 1 to 1.000, packed with iodoformized gauze, the deformity fully corrected, full dressing applied, and plaster of Paris applied from the foot up over the hip and body to the axilla. There was a second focus of disease at the right wrist. This was opened and dressed in the usual way. Patient sent home in mother's arms.

September 7th.—The child attended the clinic regularly about once a week until the early part of the summer, when the wounds had healed, and the plaster was continued until about the middle of July. The notes in detail are unimportant; but to-day, on examination, the child is found to be perfectly well, fairly well nourished, and improving without any interruption. Is able to stand and walk a little; has had no plaster or splint on since the middle of July; wounds are tightly healed; functions of the joint very nearly perfect, A. G. E. being 180° and flexion up to an acute angle, rotation about one-half normal. No reflex spasm; little or no laxity about the joint; abduction and adduction good. The comparative measurements were: R. A., 11; R. U., 12½; R. T., 3 inches down, 6¾; R. K., 6.; R. C., 5. L. A., 11; L. U. 12½; L. T., 3 inches down, 6½; L. K., 6.; L. C., 4¾.

Case II.—Sarah A——, aged ten months, the father Carlo A——, of Baxter Street, rear house, second floor, presented at my clinic on May 7th with an immense abscess over the left hip, with an anterior curvature of the spine that caused me to strongly suspect disease of the vertebræ. The abscess extended over past the vulva, posteriorly, past the median line. The disease was of recent date, the child suffering very much, thigh held flexed and excessively painful. A free incision was made, front and back, a large quantity of pus evacuated, and, on thrusting the finger into the sac the head of the femur was lying very nearly loose. The bistoury was inserted and a small cartilaginous attachment cut away. The acetabulum was curetted, sac also curetted, thoroughly cleansed with corrosive sublimate, packed, and full dressing applied, plaster of Paris from foot to axilla. Dose of paregoric administered, child sent home.

On the 13th the improvement was very marked. Discharge very slight. Drainage-tubes inserted; re dressed with plaster. Temperature at this date was 100.2° F.

May 7th.—Child doing well.

May 11th.—Wound granulating. Tubes removed. Child gaining flesh. A more snugly fitting plaster-of-Paris bandage applied.

May 14th.—An abscess had formed on the inner side of the thigh, which was opened and drained by iodoformized gauze tent.

[1] Read before the Practitioners' Society of New York, October 7, 1892.

September 7th.—The plaster was finally removed about the middle of July, all the wounds having long since healed, and a snug roller bandage applied. Saw the case to day for the first time since the plaster was removed. Child rather fat, well nourished. The movements at the hip very nearly perfect. A. G. E. 175°; A. G. F. about 45°. Abduction nearly perfect. Rotation over two-thirds normal arc. Adduction good. Hip seems firm and child can walk on it.

R. A., 12; R. U., 14; R. T., 3 inches down, 8¼; R. K., 7; R. C., 6¼. L. A., 12; L. U., 14; L. T., 3 inches down, 8¼; L. K., 7; L. C., 5⅜.

It will be seen that in the first case the bony structures were not involved. It was really a periarticular abscess, and although deformity had arisen and the probabilities were that the process would have extended rapidly to the joints, an excellent recovery has been obtained by simply free incision, drainage, and immobilization.

In the second case the head of the bone was found loose in the cavity and was removed, and yet, under the same treatment, a perfect result has been obtained. It may be further noted that these cases were not in hospital, that they required very little attention at home; in fact, I think that they were visited only once or twice during the whole course of the disease. They were brought back and forth to my clinic, the dressings attended to at the clinic, and in every instance the plaster-of-Paris was renewed, so that the parts were kept in good position all the while. The treatment, therefore, which I insist upon, and which I think is justified by the two cases here reported, is early incision, thorough evacuation of all abscess cavities, correction of deformity and shortening at once, free drainage, and immobilization continued throughout the entire period of repair.

I feel that it is unnecessary to take up your time with any lengthy remarks on the use of plaster-of-Paris, or I should like to insist on its more frequent employment in surgical dressings, especially where joints are involved and where it is important to secure absolute rest to the parts. I know that many surgeons object to plaster, because it is difficult to properly apply, and because they fear excoriations and discomfort. These objections can easily be overcome, and I am free to say that no immobilizing apparatus with which I am familiar has given me anything like the satisfaction that I have obtained from the plaster-of-Paris

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Symphyseotomy.—Charpentier declares that, thanks to antiseptics, symphyseotomy is an operation which gives excellent results when the pelvis is contracted to a conjugate between two and one-half inches and three and three-tenth inches. It almost assuredly allows the operator to save both mother and child. It spares the obstetrician the cruel necessity of sacrificing a live child, or of waiting for its slow death when he cannot make up his mind to perform cephalotripsy as long as the sounds of the fœtal heart persist. This delay seriously affects the mother. Symphyseotomy has a very limited scope, clearly defined. It stands between premature delivery and Cæsarean section, and associated to the first of these obstetrical interventions it allows the otherwise forfeited lives of the children to be saved. Like Cæsarean section, embryotomy should become an exceptional operation, and it is especially embryotomy that the operation of symphyseotomy should render a thing of the past in obstetric surgery.—*British Medical Journal.*

Acute Yellow Atrophy and Syphilis.—Dr. Engel Reimers reports three cases tending to support the view that acute yellow atrophy of the liver is a result of the syphilitic poison. In these cases the first symptoms appeared about seven months after the primary sore. Therapeutic measures were without avail, but the reporter had the satisfaction of seeing his diagnosis confirmed at the autopsy in each instance.

PROCTO-PLASTIC OPERATION FOR CURE OF CICATRICIAL STENOSIS OF THE ANUS.[1]

By L. J. KROUSE, M.D.,

CINCINNATI, O.

HARRY H——, aged about four, living in an adjoining city, was brought to the surgical clinic of the Medical College of Ohio, in August of 1890, with the following history: About two years ago (in December of 1888) he was suffering from retention of urine, and a hot water sitz-bath was ordered for him by the attending physician, who placed the patient in the bath and held him there for at least half an hour, notwithstanding his protestations that the water was too hot. At the expiration of that time he was removed from the bath, and it was then noticed that the perineum and lower part of the bowels as well as the buttocks on each side were reddened and an immense bulla, the size of a child's head, soon made its appearance, covering that area.

After a few days this bleb ruptured and the underlying parts were then found to be covered by a grayish black mass, which soon sloughed off, leaving an ulcerated surface that required over two years and a half to granulate and cicatrize.

He was brought to the dispensary on account of difficulty in defecation and of constantly soiling his clothing. He presented, on examination, a healthy general appearance, giving no idea of the pain and suffering that he had undergone. He had entirely recovered from the emaciation that had been present for a long time.

Looking at the region involved, it was found that the lower outlet of the pelvis was one mass of cicatricial tissue, limited anteriorly by the scrotum, extending posteriorly nearly to the upper part of the sacrum and encroaching on each side on the buttocks and thighs. Its outline resembled very much that of the conventional representation of a heart, with the apex pointing forward.

The scar tissue was pale in color and glossy in appearance, showing that the parts had been healed for some time. It was not of uniform thickness, but seemed to be much thicker behind the anus and on each side of it than it was in front.

Near the anterior portion of the cicatrix was an oblong opening, compressed from side to side, with its greatest diameter from before backward, which opening led in a funnel shape to the anus. This was filled up with fecal matter.

On attempting to introduce the little finger into the anus, it was found that this orifice was so small that the tip of the finger could not enter, and that the orifice was patulous, being held open by the dense cicatricial tissue of which its walls were formed.

In order to determine more accurately the size of the opening as well as the length of the stenosis, use was made of Otis's urethrometer, which registered as it entered the stricture 25 of the French scale, and after passing one-half inch into the bowels the instrument could be dilated to its full size, showing that the scricture was of limited extent.

Before resorting to operative measures, attempts were made to cause an absorption of some of the cicatricial tissue surrounding the anus by massage and the daily introduction of bougies. At first we were rewarded by slight improvement, but this did not continue long; irritation and ulceration followed the use of the bougies, and it was soon apparent that, as in resilient stricture of the urethra, nothing could be done but to thoroughly split the stricture with the knife. The boy was therefore sent to the hospital, and on December 6, 1890, with the assistance of Drs. Marcus and Carroll, I performed a modified Diffenbach's operation, which consisted in splitting the contracted orifice both anteriorly and posteriorly. The anterior incision extended through the cicatrix into

[1] Read before the Cincinnati Academy of Medicine, January 25, 1892.

the healthy submucous tissue; the posterior cut was carried backward into the dense cicatrix to the extent of about half an inch. A tongue-shaped flap of skin, an inch and a half in length by three-quarters of an inch in width, was then dissected from the scrotum and perineum and slid back into the anterior incision and attached to it and to the gut by numerous silk sutures. Into the posterior cut another flap of skin was sewed, but this flap did not come from the immediate vicinity, but was dissected from the healthy tissue of the left buttock outside of the scar, and it had to be twisted before being sutured to the cut.

The patient rallied nicely from the operation. The bowels did not move for several days. There was no rise of temperature.

The stitches were removed on the eighth day, and it was then found that the anterior flap had united nicely, while the posterior one had died; no doubt its death was due to the poor blood-supply of the dense cicatricial tissue to which it had been sewed.

There were no unfavorable sequelæ in the progress of the case, except that on several occasions it appeared very much as if the stitches would be torn loose on account of the large fecal accumulation which pressed upon the parts and protruded from the anus. This accumulation was removed artificially by means of the sharp spoon-like handle of the scalpel.

The dilatation of the pouch directly above the sphincter muscles was so great that it took considerable time and a good deal of patience to thoroughly remove the fecal matter.

The patient was discharged at the end of the third week with an anus that readily admitted the index-finger of the right hand. A bougie was used regularly for some time after the patient left the hospital.

It seemed remarkable what improvement had taken place after an operation of so little magnitude. Here we had a patient who, before the operation, was always soiling his clothing; he was a nuisance not only to himself but also to his companions; and he was frequently sent home from Sunday-school by his teacher.

His incontinence came not from a weakness of the anus but was due to an over-accumulation of fæces in the rectum pressing upon a contracted and patulous anus. The lower bowel was always full, and it was only by means of oil and enemata that a movement could be obtained, and even with the assistance of these remedial agents the patient was compelled to strain so much that by the time his bowels had moved he was completely exhausted.

At present we have an entirely different picture, the boy does not complain of anything, he enjoys the best of health; he goes to school and is not troubled with involuntary discharges of fæces. He has a daily movement of the bowels, and, as his mother informs me, they are normal in size as well as in form. The sensation of these parts has returned, and the patient always notifies his mother whenever he wishes to go out. He never soils his clothing, not even, as his mother informs me, when his bowels are loose.

The question naturally arises, What gives the boy such control over his bowels? The external sphincter muscle is destroyed, and if it were not the muscle would be so thoroughly incorporated with the cicatrix that its function would be completely annulled. We must look elsewhere for an explanation. The nerves of the parts have regained a good deal of their lost sensibility, and this may account partly for it, for as soon as the fecal mass reaches the lower portion of the rectum the desire for an evacuation comes on and the patient then notifies his mother of the fact.

But the more plausible explanation is the one based on the mechanism of the parts. If we look at the anus, we find an opening longitudinal in shape, whose lateral walls are parallel, being composed entirely of dense fibrous tissue.

These walls are not kept asunder as they were before the operation by the stiff unyielding anterior wall, but are allowed to approximate by the thin delicate skin which is interposed between them.

When the bowels move the opening of the anus takes more of a triangular shape, with the apex backward, resembling very much that of the rima glottidis during deep inspiration, while in the quiescent state of the bowels, the walls of the anus run parallel to each other like those of the true vocal cords during phonation. To both of these causes do I ascribe the good retentive power of the anus.

THE PERMANENT WARM BATH EMPLOYED IN ARTICULAR INFLAMMATION.[1]

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In December, 1889, I read before this Society a paper on the employment of the permanent warm bath in cases of erysipelas of the extremities. I wished to show the powerful effect of the warm bath on this infectious inflammation, to show how the temperature was thereby promptly reduced and how the whole course of the disease at once changed for the better.

I attempted to explain this fact by presuming that the permanent bath, which in fact was only a few degrees less than blood-heat, reduced the temperature; that the parts, after being for a while immersed, became swollen, and lost their faculty of absorbing pyrogenic matter on account of the connective tissue having become too tense and the lymphatics being obstructed. Thus erysipelatory infection by way of lymphatics would be impossible, the focus of infection being excluded, while the pyrogenic matter was carried, by way of increased blood-circulation, out of the system.

To-day I wish to communicate an observation upon the remarkable effect of the warm bath on arthritis and its influence on innervation, circulation, and tissue metamorphosis; also its efficacy in relieving pain and aiding absorption.

Considering the permanent bath as a therapeutic measure, we find fixed laws to govern its employment are yet to be determined, and much which is known is to be complemented in several directions. Some facts, although founded upon experience, should have a scientific, a physiological basis. Of hydrotherapeutics in general it may be said that many rational facts found by scientific research would be retained if numerous as yet isolated truths of experience would have been appreciated according to their value, instead of being lost to memory and to practice. "Not the remedies, but rather the methods of treatment, will be the feature in future," says Ziemssen. Hydrotherapeutics will become a more and more scientific method of treatment, a method founded upon physiology.

Delia G——, the patient whom I present to the Society, is of Ireland, twenty-four years of age, always well before, and of remarkably strong muscular development; was taken ill toward the end of September, 1891, with rheumatism of the left elbow joint; there were unusually severe symptoms of inflammation, especially violent pains. Several antirheumatics gave little or no relief, even antipyrin did not ease the pain or procure sleep for the night. Of all the remedies employed it was only the plaster-of-Paris bandage which gave some satisfaction. I left this bandage on for a fortnight, and a second time for ten days on the arm, and removed it when I had reason to suppose that the symptoms of inflammation, viz., swelling, pain, and increased temperature, had subsided. This proved to be the case whenever I removed the plaster-of-Paris.

Soon after I had removed the first bandage symptoms of inflammation reappeared; after removal of the second, stiffness of the joint remained. It was only while the

[1] Read before the German Medical Society, New York, May 2, 1892.

patient was under the influence of chloroform that I was able to bend and to stretch the arm. While I made these forced flexions and extensions, frictions, the symptom of synovitis fibrinosa could plainly be felt. The forced flexion and extension under the influence of chloroform gave no permanent result. On the contrary, the exudation in the synovial cavity increased, and mobility was reduced to a minimum. The perisynovial soft parts became infiltrated, and added to the increase of immobility.

At this time patient could and would not remain with the family who had hired her to do general housework, and on November 30, 1891, she became an inmate of St. Francis' Hospital, of this city.

One of the physicians of this institution told me that according to his opinion the prognosis in regard to the usefulness of the arm of my patient appeared doubtful. The treatment, he informed me, consisted in forcing the joint, which could be brought to a right angle with difficulty, by means of graduated bandages into an acute angle. The patient said that during her stay in the hospital she took no medicine of any kind.

On December 12, 1891, she left the hospital. I now found the arm in the same condition as before she entered the hospital. To bring the joint from an obtuse to a right angle gave the patient considerable pain; and to go further in the way of flexion I regarded as too risky.

On December 15, 1891, I had the arm submerged in a warm bath, the bathing-tub consisting of an oval-shaped wash-boiler. I ordered some water taken out hourly and hot water added to keep the temperature as high as would be consistent with the patient's comfort. For the night moist compresses covered with flannel bandages were substituted. No medicine while the arm was treated by permanent submersion.

The patient had followed my orders only too conscientiously. She had taken the water so hot that it scalded hand and arm, the epidermis became raised in the shape of numerous blisters. I did not place much stress on this accident, because, according to my experience, the warm bath simply continued would be the remedy for the effects of the too hot bath. Such proved to be the case. No pain or ill consequence of any kind followed.

The effect of the permanent bath was highly gratifying. All pain the patient had been complaining of ceased at once. From day to day I could make more extensive flexions and extensions of the arm without causing violent pain to the patient. The comparatively slight pain which I caused now while making passive motions disappeared very soon when the arm was submerged again.

On the third day the patient herself could bring the elbow-joint to a right angle, the following day she could do this without causing any pain. On the fifth day she brought the joint to an acute angle, and on the tenth day flexion and extension were normal.

Since that date (December 26, 1891) patient has been attending to her housework, she is able to do washing and ironing for the household. Unfortunately she is still exposed to the danger of rheumatic invasion, and from time to time new rheumatic attacks in the elbow-joint supervened. I wish to repeat that during the time of permanent submersion, that is from December 15th to December 26th, patient took no medicine whatsoever. Since then, whenever new rheumatic inflammation has set in, the case has been benefited by salipyrin. However, when pain and other symptoms of new inflammation appeared, I ordered the arm to be placed in the warm bath for one or two hours at night, and the result was invariably that this relieved the pain.

I have to confess that, as you will perceive, the arm even to-day cannot be flexed quite as far as the sound one, also that there exists a minimal swelling at the elbow-joint; but I am convinced that if my patient would desist from work and could for days employ the warm bath, and, above all, be removed from all causes of new rheumatic infection, these comparatively slight remnants of rheumatic inflammation would disappear completely.

While I was treating this case I was not aware that the method employed by me had been practised by others, and even after I have now looked over the literature, as far as I had access to it, I find that very little has been published on the subject. Dr. A. Jacobi, to whom I first communicated my observation, called my attentention to a similar method of treatment which is in use at Leuk. What I found described of the Leuk method is the following:

"Leuk, in the canton of Wallis, 1,415 metres above the sea, situated in a ravine with grand Alpine scenery. The water of the springs is of 41.5° and 51° C. (107° to 123° F.) temperature, and contains sulphate of lime, sulphate of magnesia, and other salts, besides a small trace of carbonic acid. As a bath it is to be classified as an indifferent therme—the sulphate of lime is neither absorbed nor can it irritate the skin—on account of its being contained in the water in too small quantity.

"The average course of treatment is calculated to last twenty-five days, during which time either every second day or every day the patients bathe once or twice during the day. The duration of the bath is in the beginning one-half hour, and is increased gradually to five and eight hours, divided between forenoon and afternoon; after eight to twelve days of gradual increase there is gradual reduction of the duration of the bath until the initial bathing-time has been reached. Ladies and gentlemen bathe at the same time in one common basin, the size of which is calculated for twenty persons. The bathers pass the time in conversation, reading, and playing dominoes on floating little boards. At noon the basins are partly and at night they are completely, emptied and replenished. During the night the temperature of the water sinks to about 35° C. (95° F.). The diseases treated thus are gouty and rheumatic exudations, chronic exanthemata, psoriasis, eczema, prurigo."

Hueter recommends in polyarthritis synovialis acuta (rheumatismus articulorum acutus), after the acute stage has passed, and also in polypanarthritis (arthritis deformans), therapeutics which aid absorption and excite circulation, and praised, as the best means to this end, permanent warm baths, either for arm or leg, in tubs of proper size and shape, or general baths, as the case may require. He states that this therapeutic measure in polyarthritis synovialis chronica, as well as in polypanarthritis, had not been surpassed by any other method of treatment. He says: "In regard to polypanarthritis it is well known that no remedy is perfect, not even the permanent bath, but the permanent bath gives more satisfaction than all the other remedies."

Riess [1] recommends permanent warm baths in articular and muscular rheumatism; he spreads a bathing-sheet, like a hammock, above the bath-tub in such a manner that the patient may rest on this sheet in the water. The head rests on a rubber ring.

It is a well-known fact that a warm bath of long duration is mostly well tolerated. To emphasize this fact I shall give an extract of a communication from Dr. Baelz [2] on the permanent thermal baths of the Japanese: "The Japanese bathe in indifferent or slightly salty, thermes of 42° to 48° C. temperature, ten to fifteen times daily. Of special interest is a rudimentary bathing establishment situated in the mountainous region of Dzooshin, named Kawanaka. It is an Indian therme of 36.2° C. The patients remain in the water not only whole days, but for weeks at a stretch. They only leave the water to attend to calls of nature, or occasionally to take a little exercise. The body is placed in a half-recumbent or otherwise comfortable position, the occiput and neck rest on the margin of the wooden basin, in which a number of patients at the same time are gathered together. To prevent the rising to the surface during sleep the bathers place a more or less heavy

[1] Berl. klin. Woch., 1887, 29. [2] Ibid., 1884, 48.

stone across their groins. The proprietor of the bathing establishment, a man seventy years of age, remains during nearly the whole winter in the water—without garments and without stove he feels comfortable and warm, while outside snow covers the ground for four or five months in succession. His functions and his general condition are normal."

To comprehend the therapeutical value of the permanent warm bath we shall have to study the elementary effect of the warm bath.

While by the cold bath the muscles and the capillaries of the skin, and of those tissues to which the effect of the cold extends, are made to contract—a contraction which, after the irritation produced by cold has ceased, is followed by dilatation, the local anæmia is changed into hyperæmia—the mechanical proceeding under the topical effect of warmth runs in the opposite direction; the tissues relax, the capillaries become dilated and filled; in the beginning, if the effect is a strong one and of long duration, even passive stasis may be the result. After cessation of the thermal irritation contraction of the vessels takes place and renewed quickening of the circulation. The experience which we can have by bathing our extremities, and observation of the circulation in the web-membrane of the frog, confirm both equally well the difference in these two processes: the effect of cold is temporary contraction followed by dilatation; of warmth, temporary dilatation followed by contraction.

If a limb is left in warm water for some length of time the soft parts become swollen, quite considerable increase of volume takes place, and after removal from the bath the skin of the submerged limb is warmer, often quite red, which discoloration disappears only after a few days.

Winternitz made experiments in the institution for experimental pathology of Professor Stricker, of Vienna, in measuring the increase of volume of the limbs subjected to baths of different temperatures. Employing for this purpose an ingenious contrivance he was enabled to measure, on the arm suspended in water in the apparatus, increase of volume, which occurred simultaneously with the pulse-beat, and was caused by the large amount of blood driven into the arm with each systole of the heart, also changes of volume which corresponded with the larger amount of blood passing out during each interval between two systoles. He could establish the fact that the change of volume of the arm suspended in water of 8° C. could well be distinguished from the one obtained when the arm was suspended in 38° or 40° C. In the former experiment each heart systole presses only a relatively small amount of blood into the arm. The reason of this can only be—the strength of the heart's action not having materially changed during the experiment—that there is a greater power of resistance of the blood-vessels (which have been contracted by the effect of cold); this power of resistance opposes the entering of the blood-wave to a certain extent.

The by far greater deviations of volume of the submerged arm can only be plausibly explained by assuming that the long lasting effect of the warm bath had caused dilatation and relaxation of the vessels. With each systole of the heart more blood is driven into the arm, on account of the reduced resistance of the vascular walls, the lumen of the vessels thus enlarging considerably. This explains the enlarged volume.

Winternitz thus demonstrated *ad oculos* by his experiments that when some part of the body is submerged in warm water a considerably increased amount of blood passes into it with each systole, and a correspondingly large amount flows back through the veins during the intervals.

Indifferent baths, however, according to Jacob,[1] likewise affect to a certain degree the circulation. As a rule the skin is from 5° to 10° C. cooler than the axilla. The normal indifferent temperature of the bath, which is 35° to 36° C., increases the temperature of the skin to almost the same degree of temperature of the internal organs, the latter sinking generally to 0.5° to 1° C., the outside temperature rising to such extent that there is often found a difference of only 0.5° C. in favor of internal temperature. This sinking of the internal and rising of external temperature means acceleration of blood circulation, mostly accompanied by slight reduction of frequency of pulse, and is followed necessarily by relaxation of muscles, stimulation of sensory nerves, and calming of nerves of warmth and pain.

[1] Virchow's Archiv, Bd. xcvi.

The warm bath, while it surrounds the surface of the body, or part of the body, with an equally tempered medium, does away with fluctuation as to space and time of the loss of heat, and thus acts soothing. This is of especial advantage for therapeutical purposes. It is probable that a law exists according to which soaking of the peripheric ends of the nerves reduces, and drying increases their excitability. At least Heyman[1] thinks it possible that the calming effect of the warm baths is superinduced by suppression of perspiration, and thus retention of moisture, which proceeding takes place during the bath, and which causes, in the first instance, soaking of Krause's end clubs and Meissner's sensory bodies; in second instance, cessation of moleculary movements in the extremities of the nerves, and thereby general calming of the nervous system.

In the paper mentioned above I cited the example of Napoleon, who while at St. Helena, and while the monotony of his life was only interrupted by the pains he suffered from his cancerous disease, found relief when he remained for hours, or even whole days, in the warm bath.

It is to be supposed that the permanent warm bath will prove serviceable in sciatica.

Numerous physiological facts are known which support the theory that withdrawal of water excites the nerves, while gradual taking up of water (assimilation) reduces the irritability of nerves. On this theory is based the hypodermic injection of water to produce local anæsthesia.

The thermic irritation of nerves, while it lessens the sensation of pain, excites at the same time, by way of reflex action, especially in the muscle, an increased change of substance (Stoffwechsel). To relieve pain in the muscles caused by fatigue, there is no better means than a warm bath. Even comparatively high degrees of temperature have a refreshing effect. The fatigue or exhaustion of muscles is caused by more than normal accumulation of the products of their function. To oxydize and eliminate these products a certain amount of change of matter (Stoffwechsel) is required, which charge the fatigued muscular fibre is unable to perform. The specific effect of the warm bath is to afford immediate facility for oxidation. Without the warm bath this relief would only be obtainable after bodily rest of hours or days. To illustrate this I refer once more to the striking example of Napoleon. In the evening after a battle, instead of seeking rest and sleep in bed, he would take a warm bath, to enable him to resume the march during the night and fight a second battle the following day. On the morning of June 21, 1815, when he arrived, coming directly from the battle-field of Waterloo, in the Elisée, and dismounted from his carriage, he had to lean heavily on the arm of Caulaincourt, and he asked for a warm bath. Six days he had been on horseback nearly all the time. While he was in the bath Davout came twice to urge him to come to the assembled ministers. There was no time given for long rest, the warm bath alone stimulated him to renewed activity.

The changes of the physical and chemical condition of tissues, the augmentation of the organic functions, the acceleration of the blood-circulation, the dilatation of the vessels, all this depends on specific action of the warm bath on innervation. The effect produced by the

[1] Virchow's Archiv, Bd. l.

thermal irritation of the extremities of the nerves is manifested primarily at the point of contact and along the centripetal tracts originating from the point of contact, and secondarily, in the central organ itself, as also conveyed from there by the centrifugal motor tracts.

This irritation causes also change of innervation at the point of contact itself, as well as in all the motor and trophic fibres which are related to such point of contact as long as they are by conveyance or reflex action connected with the region of irritation. It is to be noted, however, that the effect on the motor fibres is not exclusively one of reflex action, as far as the point of application (of thermal irritation) is provided with a multiple net-work of ganglia; and it suggests itself to the mind that these ganglia may act as so many peripheric centres having a direct influence on such formations as are provided with these ganglia, an influence independent from brain or spinal column.

The thermal effect may not only increase innervation, that is, direct'y excite, but may also produce the opposite effect, that is, reduce irritation. This depends on the amount of strength or duration of one and the same agent, in some cases by over-fatigue or by excitation of so-called checking nerves (Hemmungsnerven).

Cold as well as warmth may produce temporary retardation, but also an accelerating effect on the process of Stoffwechsel.

The degree of primary Stoffwechsel caused by reduction of heat—during lasting reduction of heat the Stoffwechsel becomes tardy—depends on the degree of the reflex excitement of the muscular tonus or the muscular contraction thus excited. The more potent the thermal excitation of nerves, the more considerable will be the reflecting acceleration of the process of Stoffwechsel.

If I wished to give an exhaustive treatise, I would have to enter elaborately into the description of the effect of the warm baths on the Stoffwechsel; I should have to speak on their effect of increasing the formation of urea, the variation of oxidation under various degrees of temperature of the baths; I should report the result of the different experiments on the Stoffwechsel in connection with warm baths, but I do not wish to extend my paper thus far. I will only mention that, notwithstanding clinical experiences we are in need of experiments on this subject. The results of the different experiments thus far made and published are treated in Leichtenstern's book on Balneotherapy, which forms part of Ziemssen's work on general therapy.

We shall remember that the irritation of the peripheral nerves caused by warm baths have, as illustrated in the case cited above, a gratifying effect on the accumulated pathological products by increasing the amount of blood on the surface and relieving the overcharged parts below by accelerating the general circulation.

Reflexes in Hip-disease.—Dr. Brackett says that in cases of coxitis the condition of the patellar reflex depends on the same general causes as the muscular spasm. When muscular spasm is absent the reflexes are not altered, but if the joint is irritable the reflexes will be increased on the diseased side. "The presence of subjective symptoms does not apparently affect the phenomenon. The value of this is twofold: it becomes an indication of the irritability of the joint in the absence of subjective symptoms in the same way as does the involuntary muscular spasm, and also of diagnostic value in the early stages in the absence of other indications. In this it can be used as one of the evidences in distinguishing between early hip and low lumbar caries. for a marked difference is shown in the case of spinal caries in this matter of reflexes, as these show an almost constant uniformity, and are not only equal but much less likely to be exaggerated even with the presence of other disease." In cases of long standing, in which atrophy is marked, this sign is of less value.

Progress of Medical Science.

Red Bilberry (*Vaccinium vitis idæa*) **in Articular Rheumatism.**—The red bilberry is a popular remedy in Siberia for rheumatism. Smirnoff (*Rép. de Pharm.*, July 10, 1892) reports excellent results from decoctions of the whole plant, in doses of thirty to sixty grammes to a pint of water. This drink should be taken for three months steadily. It is especially efficacious where salicylates, iodides, and antipyrin fails.

Nervous Disease During Græco-Roman Antiquity.—Though neuropathology as to-day understood was unknown to the Græco-Roman period of history, there existed a certain acquaintance with nervous disease that two Frenchmen, Michel de Tornery and Papillon, have put into book form (1892), with the foregoing title. There are in ancient writings magistral descriptions of epilepsy, hysteria, and mania, characterized by shrewd powers of clinical observation. Hippocrates, for example, states that. after injuries to the skull, paralysis is on the right side if traumatism affected the left, and *vice versa*. Celsus describes the difference between hysterical and epileptic seizures, and states that hysteria also exists in the male. Even then, as to-day, the most bizarre remedies were in vogue. The ancients used testicles of animals as remedies for nervous disease, content, however, to have them absorbed by the digestive tract. Yet the idea is the same in essence as that embodied in treatment by means of the late famous elixir.

Hygiene of Childhood.—While recognizing the advantages of the Parisian house, Grellety, in a recent monograph, deplores the lack of space in children's rooms. In the finest, the best rooms are reserved for state apartments and those overlooking court-yards are given to children. The air is not pure; and even when infants pass part of the day in public parks, they fail to get sufficient oxygen during the twenty-four hours. Less parsimony in the matter of light and air would be rare good fortune for the little ones.

Height and Health.—In the *Annales d'Hygiène*, April, 1892, G. Carlier, an army surgeon, gives some interesting statistics concerning height, which is largely an affair of nationality. Americans are tall, according to the author, because of creature comforts and material prosperity that prevail in their country Possibly a factor of equal importance is that the majority are descendants of Germanic tribes, notably the Anglo-Saxons and Teutons. The height of conscripted French soldiers is arranged in the paper according to occupation. The student class and farmers are tallest; mechanics, printers, masons, servants, etc., come next; and weavers and shepherds shortest. In prosperous regions height is greater than in poorer provinces. Among disabilities and negations for admission to the French army are insufficient height, myopia, goître, epilepsy, and tuberculosis

Vesical Tumors in Children.—Phocas, of Lille, reports one case of his own, in a child six and a half years old, who was operated upon for vesical tumor, of which a portion was removed. Transient benefit only resulted, the neoplasm growing again and death following speedily. To this the author adds the thirty others that literature furnishes. Malignant growths in the bladder are more frequent than benign; troubles of micturition are common in both sexes; in girls diagnosis is easy, as the vesical tumor dilates the urethra and appears at the orifice; in boys, the bladder seems to be dilated, but on introducing the catheter no urine is found; diagnosis is completed by rectal exploration joined to abdominal palpation. Cures have only been obtained in benign tumors. In event of malignant growth, death comes rapidly. As this is the rule, is it not better to refrain from operating?

Clinical Department.

THE TOXIC EFFECTS OF ANTIFEBRIN COMPLICATED WITH ALCOHOLISM, ILLUSTRATED BY A CASE.

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An urgent call recently took me to a lady supposed to be dying. On arrival I found the patient, aged forty-five, seated bolt upright in bed, propped by pillows. With something more of a curious and anxious than alarmed expression she was intently gazing on the reflection of her features in a hand-mirror.

There was no marked dyspnœa, but the face displayed a ghastly cyanosed appearance, the lips being purple, while the superficial capillaries of the face were mapped out, particularly along the margins on the alæ nasi and over the cheek-bones. The general aspect of the face was of a dusky ashen-blue-gray appearance, so also with the hands and feet, the hue of the nails served to heighten the livid appearance. Stigmata appeared on the chest and various parts of the body.

Examination of the case disclosed the fact that the patient was a dypsomaniac, and had just ceased a day or so before from a period of indulgence in brandy, whiskey, and port wine alternately. As is often the case in confirmed alcoholics, she displayed no evidence of intoxication in her speech, which during my first visit was evidently being controlled and restrained. Ample evidence, however, was forthcoming, that the dregs of a drinking bout circulated in the system, and complicated the case. She was exceedingly restless, and on my second visit opened up a fire of artillery, first against her husband, next against her mother, and lastly against me.

It was elicited that in addition to the stimulants taken for indulgence, the patient had been almost incessantly drugging herself with various remedies, among which may be mentioned, blue pill, Hunyadi Janos water, citrate of magnesia, sweet spirit of nitre, sal volatile, and lastly antifebrin, of which she had taken ten grains at 8 P.M., and the same quantity at 11 P.M., 2 A.M., and 7 P.M., in all forty grains within eleven hours.

The respiration was 19, heart action rapid, but while I could not make out any murmur I was not satisfied that the heart-sounds were pure over the aortic area and down the sternum to the ensiform cartilage. I was much impressed by the character of the pulse at the right wrist, which numbered 104, as it reminded me of pulses I have observed similar in character in aortic aneurisms. This caused me to examine the pulse at left wrist, which I found from four to five beats per second quicker (counted over several minutes) and much fuller, of lower tension, and of easier compressibility. At the manubrium sterni a distinct prominence was noticeable, which the patient, seeing me observe, palpate, and percuss, remarked was "a periostitis!" I could not make out any definite signs, such as fremitus, bruit, etc., indicative of aneurism, yet it is only right to record the possibility of a fusiform aneurism, particularly as the age and habits of the patient, together with the suspicious facts noted, favored such an idea.

The tongue on being protruded was seen to be so large that one wondered how the mouth could contain it. It was heavily coated with a yellowish white fur, the breath being exceedingly offensive.

Treatment.—Upon general principles I determined to treat the case as one of acute alcoholism, therefore gave her ten grains of calomel at the outset. After the lapse of one hour I commenced the administration of small doses of nitro-glycerine, one-half drop of a one per cent. solution being given every hour, and the regimen restricted to small quantities of peptonized milk and meat-juice.

In the course of twenty-four hours the cyanosed condition was materially improved, the tongue lessened in bulk and cleaner. The restlessness diminished and the pulse fell to 80. Not wishing to push the effect of the nitro-glycerine any further, I now gave her tincture of digitalis in ten-minim doses as a heart tonic and non-intoxicating stimulant. On the third day the cyanosis had disappeared and the patient was in a more normal condition, while on the fifth day she was completely restored to her usual health.

No other drug was administered, except a sedative of twenty grains of chloral and thirty grains of ammonium bromide to secure sleep at night, and a saline purgative on the second day to flush out the intestines after the administration of the large dose of calomel given in the first instance.

The patient has gone away to the country, but I hope on a future occasion to more minutely examine the circulatory system for aneurism.

Remarks.—The salient and alarming features of the case for which I was called in were undoubtedly due to poisoning by antifebrin administered by the patient herself to counteract the evil effects of her drinking, and it illustrates the great danger of a "little knowledge" of drugs and their effects.

Much of this popular knowledge is due to the practice of some well-meaning yet unwise practitioners, who discuss with their patients the nature of the remedies which they employ and their therapeutic action. The result, it appears to me, of this prevalent fashion is: 1, Greatly to lessen the reliant faith which patients should have in their physicians; 2, said patients, becoming at last convinced they know all that is necessary concerning their diseases and treatment, drug themselves, albeit to their own detriment; and 3, not until some such alarming set of symptoms as those here recorded have arisen do they call in a physician again, which to some degree must account for the hard struggle which the rank and file of practitioners in New York experience in order to make "both ends meet."

The glib and voluminous discourses of this patient on drugs, and their effects upon the normal and diseased system, almost appalled me, and but for the presence of her mother I should have been dismissed from attendance on the case, because, forsooth, I refused to inform her as to the remedies employed—this being, she said, the only time her intelligence had been so insulted! Every physician, hitherto, had told her the details of his treatment, etc.

Before closing this paper I am induced, from having noticed several contributions on the treatment of alcoholism in the MEDICAL RECORD, to draw attention to the beneficial effects, in such cases, of large doses of calomel (which is easily administered dry on the back of the tongue, even in a delirious case). It acts as a sedative on the stomach, powerfully increases the secretion of bile from the liver, removes depressing sulphur gases and toxic compounds, generated there by excessive abuse of alcohol, and, by their removal, calms the much-irritated nervous centres.

The general treatment of such cases, without any doubt, should involve the immediate and total cutting off of stimulants, the supplying of bland, unstimulating, easily digested food, and the administration of hypnotics of a reliable and harmless nature, such as chloral combined with ammonium bromide.

425 LEXINGTON AVENUE, September 19, 1892.

Wooden Spatulas.—The facility with which infectious disorders of the mouth and throat may, in spite of careful cleansing, be transmitted to the well by the use of the same tongue-spatula for many patients, has led to the manufacture of a small, flat, wooden spatula, which, for a single examination, answers its purpose as well as more costly implements, and can be burnt after use.

MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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TUBERCULOSIS IN THE WHITE HOUSE.

THE sad death of Mrs. Harrison, after a lingering illness, has aroused a natural and widespread sympathy for the afflicted President. To physicians who have followed the story of the sickness and of President Harrison's devotion some thoughts of the danger to which he himself has been subjected will arise. Mrs. Harrison died of pulmonary tuberculosis, after an illness of less than a year. The deceased was in her fiftieth year, and might, perhaps, have been expected to be beyond the ordinary dangers from phthisis, though there was said to be a hereditary history of the disease. A year ago Mrs. Harrison had a severe attack of the grip; early last spring she had pneumonia, which was probably tubercular, and was followed by a hemorrhage. The disease seems to have steadily progressed since that time.

In the light of modern knowledge, tuberculosis is an infectious malady, and one which conveys some danger to those in close attendance, unless proper care is taken. The disease also may infect a room or house and render thorough antisepsis most important for those who dwell there. It is to be hoped that the proper precautions will not be neglected in the present case.

THE HAIR AND SURGICAL OPERATIONS.

THE preparations for a modern surgical operation have gradually developed themselves into a ceremonious observance that awakens interest and awe in the mind of the layman, and even of the plain non-surgical doctor. The boiling, the scrubbing, the putting on of uncouth garments, the patient attention to manicuring processes, are details that are watched by the devout with feelings of religious approbation. The practice of dyeing the upper extremities a dark brown with permanganate of potash and then decolorizing is at once an object-lesson in chemistry, chromatics, and laundry-work. It does not seem as though much more could be done to elaborate or adorn this sacerdotal stage of the modern surgical operation. Yet Dr. Oscar J. Prince intimates (in the *North American Practitioner*) that something is still lacking, and he recommends that in operations of gravity the surgeon and assistants should envelop their heads and beards in gauze turbans and bandages.

"Almost unconsciously," he says, "the hand may be carried to the brow, whiskers, or hair, to remove perspiration, which would be unfortunate, and would necessitate the renewal of the scrubbing process ere proceeding farther. It not infrequently happens that the most careful operator and his first assistant rub their heads together over the field of operation until dandruff and hair fall into the wound. This could hardly be detected except by a person not absorbed in the active part of the operation."

We commend Dr. Prince's suggestion to the attention of our surgical readers; and would add that it is rumored that there are at the present day no successful surgeons who wear long beards. In time to come it may be the surgeon, not the priest, who goes shaven and shorn.

ETIOLOGY OF IRITIS.

WHENEVER the iris becomes the seat of inflammation, it is fair to assume, in the absence of trauma, that some pre-existing vice diathesis or poisoning of the general system lies at the bottom of the mischief.

Syphilis, of course, is the most frequent cause of iritis, both in the early and later stages, while rheumatism stands next; but so far as the appearances produced by the inflammation are concerned, there is nothing to distinguish the syphilitic from other forms, unless it be the production of gummous deposits.

These are sometimes confounded with tuberculosis of the iris, but the diagnosis of the latter should be made with certainty in most cases, though it cannot depend solely upon the appearances and location of the lesion. The general condition of the patient must be considered, but aside from concomitant signs of the one or the other disease, we have to guide us the fact that the syphilitic lesion is usually single, and situated near the free border of the iris, while tubercle has its site of predilection near the attached margin. The former is of a brownish hue, while the latter is yellowish, or at times rose-tinted, from a fine vascular net-work over the surface.

In an interesting lecture on the etiology of iritis, Professor De Lapersonne recently stated his belief that iritis should always be looked upon as the result of an infectious process. This infection is not readily identified for each particular case, but in the manifestly infectious states —syphilis, tuberculosis, and lepra—iritis is well known to be especially frequent. Blennorrhagic iritis can readily be included, since it is beyond question at the present day that blennorrhagia may give rise to a general infection with systematized manifestations. Wecker has described an iritis of metritic origin, having its source in foci of infection located in the genital organs, and Grand Clement has spoken of a special iritic uveitis which he attributes either to a special microbe or to faulty elimination of organic waste products due to insufficient renal filtration.

The lecturer has frequently noted the coexistence of digestive disorders and iritis. This is especially the case where the stomach is dilated, and here much can be done toward the cure of recurrent attacks of iritis by appropriate treatment of the digestive tract.

It is difficult to prove that there is here an infection of microbic origin, but it may be admitted that septic products (ptomaïnes or taxalbumins) are reabsorbed from the digestive tube and produce the special irritation which determines iritis. At any rate it is always well to

examine carefully for digestive derangements when in the presence of an iritis, especially one of the recurrent type, not associated with one of the above-noted infective causes.

The rheumatic form of iritis takes on a new interest since the views put forth concerning an infective origin for all forms seem to agree with observations made upon certain pseudo-rheumatic affections depending upon infection, and also appear to be upheld by recent bacteriological investigations into the nature of acute articular rheumatism.

Professor Lahli (*Correspondenzblat fur Schw. Aerzte*, No. 1, 1892) reviews the work in this field and points out that Guttmann alone has succeeded in discovering bacteria in the contents of rheumatic joints during life. In a sero-fibrinous effusion, complicated with suppurative pericarditis, this observer found the staphylococcus pyogenes aureus. From post-mortem examination of a case in which during life no micro-organisms were to be found in an affected joint, Lahli succeeded in identifying the staphylococcus citreus, and by inoculating tubes obtained pure cultures.

This leads him to consider the latter organism as the probable pathogenic microbe of acute articular rheumatism.

Now, if the latter be proven to be really a staphylococcus disease, tracing the infection from the joint to the iris becomes a simpler, though by no means a perfectly simple, matter.

It would, however, add one more point of evidence in favor of De Lapersonne's theory that all iritis is of infectious origin.

A BILL TO PREVENT WITCHCRAFT.

We have received a copy of a bill "to prohibit electromagnetizing, mesmerizing, or hypnotizing human beings, or affecting one person through another, by electricity, and to declare the same to be a crime against the law of nations, and to define its punishment."

The bill contains the following enacting clause:

"*Be it enacted by the Senate and House of Representatives of the United States in Congress assembled.*

"Section I. Any person who, upon the high seas or in any arm of the sea, or in any river, haven, creek, basin, or bay, within the admiralty and maritime jurisdiction of the United States, who shall apply a current of electricity upon one person for the purpose of affecting another, or which does affect another, shall be guilty of a crime"—for which the punishment prescribed is death.

The bill, which might be called "An Act to hang witches," is accompanied with an elaborate explanatory document that aims to demonstrate the present existence of witchcraft or hypnotizing "one person through another," and the dangers thereof.

"Demonology," we are told "(under the name of hypnotism); in all of its forms is being practised, including the ingenerating, incubating, and inhumating from distances (on a large scale, *going into the millions*), as well as other practices of the demons INCUBI."

"The 'Augsburg Confessionals,'" the author of the bill says, "are situated in every country in the world where magical arts prevail, they are aided by an army of magnetizers numbering nearly a million, besides their assistants, the mind-readers, and mediums, who, together with most of the magnetizers, present that condition of *dédoublement de la personalité*, which enables them to penetrate the minds of others."

Particular emphasis seems to be put upon an alleged occult paper on æsthesiometry, published in the Medical Record, and written by Grace Peckham, M.D. The author of this alarmist bill will probably not succeed in getting his law passed, but he is going to contribute much to the gayety of nations if he keeps on.

News of the Week.

The Philosophy of Hats.—*The Lancet* discusses the question whether civilized man ought to wear hats, and comes to the conclusion that he ought. A safe conclusion perhaps would be that he surely will, whether he ought to or not. If one may reason from the experience of women, we might infer that should man discard hats and let his hair grow he would not be so bald. For baldness comes from hat pressure and infected barbers' tools. But man is a vain animal and prefers to adorn his head though he lose his hair thereby. The personal vanity of the male is directed chiefly to that part of his anatomy which lies above the clavicles. Males were the first to adorn the head, and will probably be the last to give up the practice.

Eighteen Thousand Dollars for Being Put Out.—A Dr. Buck, of Baltimore, has received a verdict for $18,000 in a libel suit against certain Baltimore physicians. When Dr. Buck came to Baltimore three years ago, he was admitted to the Maryland Homœopathic Society, after a great deal of discussion. He was expelled July 20, 1891, on charges of malpractice. Dr. Buck charged the defendants, who made the charges, with malice, and instituted suit.

Treatment of Cholera at Havre.—Dr.. Gaillard, of the Cholera Hospital at Havre, has reported the results of a mode of treatment followed by him at the extemporized hospital situated in bastion 36. Whenever a patient was admitted in the algid stage his body was at once vigorously rubbed, repeated hypodermic injections of caffeine and ether were given, as also inhalations of oxygen. If no benefit accrued two litres (for an adult) of the following saline solution were injected into the internal saphenous vein: Sterilized distilled water, 1,000 grammes; chloride of sodium, 5 grammes; sulphate of sodium, 10 grammes. This generally suffices to revive the patient. Sometimes, however, the transfusion has had to be repeated (once five times), but an interval of at least eleven hours is allowed to elapse between the injections. When the patient is able to swallow he is given a litre of sweetened water containing fifteen grammes of lactic acid. This is followed by champagne, coffee, and nutrient enemata. Dr. Gaillard's results stand thus: Cures, 173; deaths, 164; under treatment, 23—total, 360. Of the cases cured, twenty-five owe their lives to transfusion of sterilized serum. One operation generally sufficed; in three cases only was the transfusion repeated once. Fifty-two very serious cases were saved by the lactic acid treatment only, without transfusion. At the height of the epidemic there were as many as sixty-two male nurses in the hospital; of these, only one contract-

ed the disease, and he was saved by transfusion. The youngest of the transfused patients was aged eight and the oldest—there were three of them—fifty-six years.

Italian Congress of Medicine.—The programme of the Fifth Italian Congress of Medicine, which, as already announced in the *British Medical Journal*, will be held in Rome, on October 26th, 27th, and 28th, includes discussions on the following subjects: "Focal Changes in the Cerebellum and Curative Measures," to be introduced by Professors L. Bianchi and F. Vizioli; "Aërotherapeutics," to be introduced by Professors C. Forlanini and B. Luzzatto; and "Rheumatic Infection," to be introduced by Professors A. Riva and T. Gualdi.

Hearing the Nerve-currents.—At the recent Physiological Congress held in Liège, Dr. Wedensky, of St. Petersburg, contributed a series of telephonic demonstrations of the currents of action of nerves, and of the electrotonic variations of the excitability of nerves; these were specially interesting from the fact that the observer was actually able to hear by means of the telephone the passage of the currents along the nerves.

Antiseptic Oxygenation in Typhoid Fever.—Dr. B. W. Richardson, in *The Asclepiad*, recommends bichloride of methyline for internal use as being antiseptic, slightly stimulant, antispasmodic, and anodyne. The dose is from five to thirty minims. In particular he recommends it in typhoid fever, combined with peroxide of hydrogen, as follows:

℞. Methyleni bichloridi..... ʒ j.
Sol. hydrogen. peroxid. (10 vols.)..... ʒ j.
Acid. hydrochloric. dil... ..... ♏xxx.
Aq. destil.....ad ʒ vj.
M. Sig.: One-half ounce q. 3 h., in half a tumbler of water.

This he calls antiseptic oxygenation.

A Hard State to Practise in.—The Alabama State Medical Examining Board rejects 41.16 per cent. of candidates who apply for license. Either the standard is high or the applicants are low.

The Editor of the American Lancet says "Away with the Code;" but he says it in quotation marks and believes most sincerely that it should not be done away with. The matter is under discussion in the American Medical Association and a committee will report upon it next year. It is very unlikely indeed that the Code will be abolished; but some modification of it may be made. It is felt that the regular profession makes what may be called a political mistake in antagonizing dogmatic medicine and identifying it with quackery; the profession should antagonize dishonesty, and no Code can be too strong in formulating high standards of professional conduct as regards this point.

The Yale Medical School is to have a new building to accommodate the chemical and physiological departments.

Agathin is the name of a new anti-rheumatic and anti neuralgic drug recommended by Rosenbaum, of Frankfort. It is a salicylmethylphenylhydrazon; dose about ten grains (0.5).

One of the Medical Journals of Philadelphia is pounding away, in labored editorials, at the question of a revision of our Code of Ethics. This journal, under its present management, concedes that the Code needs revision. A few years since, such a statement from a New York doctor nearly caused a convulsion among editors in Philadelphia.

Dear neighbor, codes need not trouble you. What Pennsylvania needs is a good law creating a board of medical examiners. Improve the quality of physicians. Make them all pass an honest State examination, homœopaths and regulars alike, and codes will be unnecessary. A little more knowledge, and a little less, not of ethics, but of talk about ethics, is what the profession of this country needs.—*The Post-Graduate.*

A World's Congress of Climatology, Columbian Exhibition.—The committee on Medico-climatology (Dr. T. C. Duncan, chairman) has issued the following circular, entitled a preliminary address: "The year 1893 will be made memorable by the exposition that the world will hold in Chicago. There will be gathered not only the exponents of industrial wealth of the world in all the forms of material progress, but the advance made in art, science, and civilization will also be set forth. A series of congresses representing all of the departments of thought and scientific investigation is a true, even an indispensable, part of a world's exposition. In accordance with this idea, the world's congress auxiliary has been organized in connection with the world's Columbian exposition, and has been recognized and approved by the Government of the United States. Among the assemblages to be convened, what more fitting than that the department of medicine, the great healing art, with its many divisions, should be conspicuously presented? What more opportune time could have been selected by the climatologists of the whole world to meet and compare their observations and views on the different climates of the earth, and their effects upon humanity, and the diseases to which flesh is heir? With that object in view, a local committee of arrangements has been appointed by the world's congress auxiliary, and an advisory council will be selected from those eminent in this department in different parts of the world, to arrange a world's congress of medical climatology, to be held at Chicago during the exposition season of 1893. The design is to hold this congress at a time convenient to those who will attend the congresses of the other divisions of the department of medicine, which are assigned to open May 29, 1893. This early date was chosen to accommodate those who will desire to attend the medical congress to be held in Rome in November of next year." A preliminary programme is then suggested, and responses from those interested in the congress requested.

Syphilis and Breach of Promise.—The Court of Appeals of Kentucky has recently decided that syphilis, pleaded in answer to an action to recover damages for breach of promise of marriage, is a complete defence, following the decision of the Supreme Court of the State of North Carolina, in which the same defence was interposed and sustained in a similar action.—*Weekly Medical Review.*

Baron Léon de Lenval, of Nice, offers a prize of 3,000 francs to the inventor of the best application of the principles of the microphone in the construction of a portable apparatus for the improvement of hearing in deaf patients. Instruments for competition should be sent to

Professor Adam Politzer or Professor Victor V. Lang, Vienna, before December 31, 1892. The prize will be awarded at the Fifth International Otological Congress, to be held at Florence, in September, 1893.

The Chicago Clinical Review is the name of a new monthly, edited Dr. George Henry Cleveland and Dr. Albert I. Bouffleur.

A New Convalescent Hospital.—St. Luke's Hospital has received a bequest of house and land valued at $100,000, to be used as a convalescent hospital.

The Warren Triennial Prize of $500 has been awarded by the staff of the Massachusetts General Hospital to John Strahan, Belfast, Ireland. Subject, "Rickets."

The Entering Class at the Harvard Medical School, which it was expected would be small this year on account of the introduction of the compulsory four years' course, is, on the contrary, very large.—*Boston Medical and Surgical Journal.*

Pleuro-pneumonia.—The Secretary of Agriculture has issued a proclamation declaring that the United States is free from the disease of cattle commonly called pleuro-pneumonia. It is hoped that cattle from this country will henceforth be allowed free admission into Great Britain.

Whittier's Will.—By the will of the late John G. Whittier the Haverhill City Hospital receives a bequest of $1,000. After numerous other public and private bequests the will leaves "the remaining one-half of the rest and residue" of the estate, in equal shares, to the Amesbury and Salisbury Home for Aged Women, the Anna Jacques Hospital in Newburyport, and the Normal and Agricultural Institute for Colored and Indian Pupils, at Hampton, Va.

University of Minnesota.—The new medical buildings of the University of Minnesota have just been opened with appropriate exercises. The Governor of Minnesota made the presentation of the buildings to the Board of Regents of the University. Dr. William Osler, of Baltimore, made an address on "Teachers and Students."

Alleged Fraudulent Dispensaries.—In accordance with a call signed by thirty physicians of the down-town east-side district of New York, a meeting of the profession of that part of the city was held recently at No. 200 East Broadway, to confer as to measures for eradicating so-called free dispensaries for the poor where, says the call, 'the poor and ignorant are deluded and swindled."

Cocaine Cantharidinate.—Hennig (*Berl. klin. Woch.*, August 29, 1892) describes this preparation. It is more correctly termed a mixture than a chemical combination, but this is immaterial from the therapeutic point of view. It is a white powder, readily soluble in hot water. The author introduced it on account of the painlessness with which it may be injected. Swelling and infiltration at the site of injection occur much less frequently, and are less marked than with the other cantharidinates. Once only out of 2,845 injections did an abscess form. There was never any irritation of the bowels, and very rarely of the kidneys. Like the other cantharidinates, it not only acts beneficially in chronic catarrhal processes of the nose and throat, but also in early tuberculosis of the upper air-passages. It gave good results in tuberculosis of the lungs, skin, bones, and glands. In some of the cases injections of ½ degr. sufficed. It is contra-indicated in advanced tuberculosis as well as in albuminuria. If no improvement follow ten injections the treatment should be given up, and a further attempt made in six weeks' time.

To be Called a Doctor and Become Respected.—There is a legend in an ancient Buddhist manuscript of the early days of the physician of the Gótama Buddha, whose name was Jíwaka. It having become necessary for the youthful Jíwaka to select a profession, "he considered the character of the eighteen sciences and the sixty four arts, and determined that he would study the art of medicine, that he might be called doctor, and be respected, and attain to eminence."

As an Example of the Faith of a Lay Antivivisectionist when put to the test, Professor Victor Horsley relates an anecdote of the Duke of Newcastle, a vice-president of an antivivisection society. During a recent second epidemic of rabies the Duke's brother was bitten by a dog. The dog was killed, and the Duke took its dead body to Professor Horsley, at the Brown Institution. He was informed that the question whether the dog had rabies or not could only be decided by making inoculation experiments; the Duke assented, and frequent inquiries were made by a member of the family to ascertain the result of these experiments, which fortunately remained negative. This was a typical example of the hypocritical character of the agitation.

A Memorial tablet has been placed on the house at Bergen, in Rügen, in which Professor Billroth, who, on October 1st celebrated the twenty-fifth anniversary of his appointment to the Chair of Surgery in the University of Vienna, was born, on April 26, 1829. The tablet was formally dedicated by Professor Schmidt, of Leipzig. A *Festschrift* is being prepared by Professor Billroth's pupils, in honor of the jubilee, and the students are to have a *Festcommers*, to be followed by the usual torch-light procession in the evening.

University of Vienna.—From the prospectus of the University of Vienna for the winter semester 1892–93, which has just been published, it appears that last summer the number of students was 4,919, of whom 2,380 belonged to the medical faculty. Of these, 606 were "extraordinary" students. Among the foreigners the Russians head the list with 81, the United States coming second with 47. The active teaching staff numbers 60 professors, and 71 lecturers and assistants, who, during the forthcoming winter semester will give 190 courses of lectures and practical instruction.

The Southern Surgical and Gynecological Association will hold its fifth annual meeting in the city of Louisville, Tuesday, Wednesday, and Thursday, November 15, 16, and 17, 1892, under the presidency of Dr. J. McF. Gaston, of Atlanta. Members of the medical profession are most cordially invited to attend.

Proposed Higher Medical Degree in France.—The French Minister of Public Instruction has, it is stated, submitted to the Council of the Faculties of the Universities of France a proposal for the establishment of a medical degree superior to the ordinary M.D., carrying with it the style and title of "Docteur ès Sciences Médi-

cales" (Doctor of Medical Science). The utility of the proposed new degree is not apparent, but the mere fact that such a proposal has been seriously made in a country like France, where the titles question has no real existence, will serve to show what may be expected on this side of the Channel when we are all full blown Doctors of Medicine.—*British Medical Journal.*

The Treatment of Cholera Patients in New York City.—The Committee of Conference of the New York Academy of Medicine with the Board of Health respectfully submit the following report. On September 20th, the Committee received the following communications :

"HEALTH DEPARTMENT, 301 MOTT STREET,
NEW YORK, September 16, 1892.

"DR. STEPHEN SMITH, *President pro tem*, Conference Committee of Academy of Medicine, 574 Madison Avenue, New York.

"SIR : At a meeting of the Board of Health of the Health Department, held on the 14th inst., on motion of President Wilson, it was,

"*Resolved*, That the President of this Board be and is hereby authorized to invite the Academy of Medicine to examine, through its Conference Committee and others, the preparations made by this Department for the care and treatment of cholera patients in this city, and to confer with the Board of Health in respect to measures necessary to prevent the spread of the disease.

"EMMONS CLARK,
"*Secretary.*"

"HEALTH DEPARTMENT OF THE CITY OF NEW YORK,
301 MOTT STREET, NEW YORK, September 19, 1892.

"DR. STEPHEN SMITH, *President pro tem.*, Conference Committee of Academy of Medicine, 574 Madison Avenue, New York City.

"SIR : Having been authorized by the Board of Health to invite the Academy of Medicine, through its Conference Committee, 'to examine the preparations made by this Department for the care and treatment of cholera patients, and to confer with the Board of Health in respect to measures necessary to prevent the spread of the disease,' I respectfully extend such invitation to the Conference Committee of the Academy of Medicine, and would be pleased to be informed at what time and place it would be convenient and agreeable for the Committee to meet this Board and others.

"Very respectfully,
"CHAS. GEO. WILSON,
"*President.*"

In compliance with this invitation your Committee met the members of the Board of Health, and others, on the 28th of September, at the Willard Parker Hospital. Commissioner Bryant explained at length the preparations which the Board had made with reference to the apprehended appearance of cholera in the city. These consist of : I. Organization of a corps of medical inspectors for the immediate care of each case of cholera, and of the well persons who may be exposed to the disease. II. Ambulance service for the immediate removal of the sick to the hospital. III. Disinfecting corps to clean the room and disinfect clothing.

In practice, on information being given of the location of a case of cholera, a detail of physicians at once visits the house and takes charge of the premises. If the sick person must be removed they attend to his being placed in the ambulance, and one accompanies him to the hospital. Others attend to the isolation of the family in the room and of the families in the house, and maintain a strict watch over all persons who may have come within the limits of infection, during the period of possible liability to the disease. The disinfecting corps burns all soiled and useless clothing, and disinfects by boiling water all articles to be preserved which can be thus treated. The floors and furniture, and all closets and exposed areas or passageways, are washed with sublimate solutions. During the possible period for the incubation of the disease the premises are rigorously quarantined, and constant medical inspection of all exposed families is made to discover any cases of diarrhœa. If the immediate family of the sick person is destitute, it is removed to the hospital, and the members are regarded as "suspects," who require constant watch and care. For hospital purposes the Board has secured and fitted up the floating hospital of the St. John's Guild, which lies at the foot of Sixteenth Street and East River. The Disinfecting Department is under the direction of Dr. Biggs, and when some improvements are completed, it will answer every purpose required. The President, Commissioner Wilson, submitted plans for a new reception hospital, which were laid over for future consideration. The Committee then personally examined the floating hospital and all of its arrangements for treating the sick, the isolation of cases, the handling and care of clothing and bedding, the methods of preparing and serving food, etc. The disinfecting plant was then visited, and the methods of treating infected materials were explained by Dr. Biggs. On October 4th the Committee again met the Commissioners in conference on the plans of the proposed new reception hospital. It was then learned that the Board of Health has deficient hospital accommodations on the grounds now occupied, and that it is possible to obtain additional area on the same block from the city. The committee submits the following conclusions as the result of this conference :

I. The Organization which the Board of Health has perfected to deal effectively with cholera meets our cordial approval. We do not believe that cholera can prevail widely in this city if the methods adopted are energetically applied to the early cases. The success which has already attended this plan of treating individual cases gives the most gratifying evidence of its utility. II. The hospital accommodations on the St. John's Guild vessel are admirably arranged for the comfort and successful treatment of patients and the protection of the public from infection. III. The disinfecting service, under the supervision and direction of Dr. Biggs, is ample for any emergency, and will apply disinfection by all the most reliable means known to science. IV. The Committee endorses the proposition of the Board of Health to enlarge their permanent hospital accommodations at Sixteenth Street and East River, and urgently recommends that the proper authorities of the city be immediately applied to for the purpose of having the required lands set apart for that purpose.

Respectfully submitted, STEPHEN SMITH, M.D., *Chairman ;* EDWARD G. JANEWAY, M.D. ; A. JACOBI, M.D. ; RICHARD H. DERBY, M.D., *Secretary.* October 6, 1892.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, October 7, 1892.

CHARLES L. DANA, M.D., PRESIDENT, IN THE CHAIR.

The Treatment of Acute Arthritis of the Hip in Infants—Two Cases, with Recovery.—DR. V. P. GIBNEY read the paper (see p. 505).

DR. JOSEPH D. BRYANT expressed strong interest in the paper and in the exhibition of the cases, especially the last one. He had, not long since, had under observation a case in which he made the diagnosis of periarticular inflammation at the hip-joint. The boy, aged fifteen, entered the hospital having marked abduction and eversion, although there was no dislocation. There was high temperature and swelling, but no evidence of pus or fluctuation. The case was treated by extension, the limb gradually drawn around into correct position and immobilized by plaster-of-Paris bandage. He saw the patient two months afterward, walking about the wards without any difficulty.

He remarked that Dr. Gibney's last case suggested a question which might be difficult to answer, namely, what was there to prevent the bone slipping upward into the hip-joint and causing shortening, which, it was to be noticed, had not taken place. Apparently there was no structure to interfere except the capsular ligament, the head having come away. In dislocations at the hip the femur could be pushed up a considerable distance, causing shortening.

Another interesting fact was that so prompt a recovery had been made after simple evacuation, for the operator could not have seen all the crevices where the disease might have extended. He inquired of Dr. Gibney whether he thought that with the use of the limb would come shortening.

DR. GIBNEY replied that he supposed after four of five years some shortening would take place; he did not know how it could be otherwise.

DR. ANDREW H. SMITH inquired whether any of the periosteum had been left and was supposed to be taking part in bone reproduction.

DR. GIBNEY replied, possibly so; that the function was so good that whatever bone was at the joint it served the purpose of a head.

DR. GEORGE F. SHRADY remarked that the cases were of great interest as proving the good results of prompt evacuation of the abscesses. It was certainly very gratifying to note that there was no shortening after the removal of the necrosed head of the femur. He agreed, however, with Dr. Bryant in believing that such a condition would only be a temporary one. The full length was apparently due to infiltration within the capsular ligament, which in time would become absorbed and the limb become somewhat shortened.

DR. GIBNEY said this shortening was to be expected in time, unless, as Dr. Smith had suggested, there should be reproduction of bone.

DR. SHRADY added that if the destructive process had extended to the line of the capsular ligament it could not be expected that reproduction of bone would take place.

DR. A. H. SMITH inquired of Dr. Gibney whether he selected his time for operating, or whether the children came early enough to give any choice in this respect.

DR. GIBNEY said he would have operated earlier had he seen the patients earlier. Where fluctuation had formed in disease of the ankle, knee, or hip, in children, the staphylococcus aureus or albus was already present and an operation was indicated.

Dr. Gibney remarked, regarding the complete evacuation of the abscess and thorough cleaning out, that one should remember that the etherization in children should be made as short as possible, in order to reduce shock. If one spent a long time searching upon the ilium and down in the femur for all possible points of disease he might feel assured the child would have a hard struggle to recover. It was the rule of some very good surgeons to cut out all diseased parts within easy reach and to let the remainder alone, expecting nature to take care of further disease foci.

It was also important to distinguish between a tubercular process and a pyæmic process. The former was more likely to be persistent, whereas in the latter an operation, including free drainage, was likely to stop the septic poisoning and cause immediate improvement.

The class of cases presented this evening should be of interest to the general practitioner, inasmuch as he was liable to mistake them for the tubercular form, expect them to run a slow course, while in reality they quickly produced marked deformity, great emaciation, and might soon lead to death. Yet he believed that many cases which came under the notice of the orthopedic surgeon years later, with more or less deformity, were, at the beginning, of the kind shown by him, and which had ended in apparent complete recovery without deformity on opening the abscess, the later deformity occurring perhaps in the manner related by some of the gentlemen in the discussion. One of the worst cases he had seen was in a girl, aged sixteen, in whom the end of the bone had taken to moving up and down like a congenital dislocation, and could not be held down by any means which he had yet tried. Some brilliant results might, perhaps, be obtained if the general practitioner would learn early to distinguish between this class of cases and that of tubercular disease of the joint. Left untreated, the abscess was likely to burst into the pelvis or extend down the limb and lead to rapid dissolution. It was exceptional for the pyæmic cases to take place after the second year.

Vesical Stone Formed Around a Piece of Catheter.—DR. JOSEPH D. BRYANT presented several pieces of stone, with a piece of rubber catheter within, removed from a young man, about sixteen years of age. The patient had been brought to him by the family physician, who stated that about three years before, while catheterizing the bladder for some reason which he did not name, a portion of the gum elastic catheter had broken off and remained. The case illustrated the importance of removing any foreign body from within the bladder as soon as one knew it had been left there.

DR. SHRADY referred in that connection to the following case: A man, sixty five years of age, entered the hospital with a broken catheter in the bladder. The family physician had passed a rubber catheter, broke it off in the urethra, and while he had gone home for an instrument with which to remove it, a second physician was called, who attempted catheterization and pushed the fragment on into the bladder. Dr. Shrady introduced a lithotrite, fished for the catheter, at the same time trying to avoid injury to the mucous membrane. Finally he grasped the catheter a distance from the end, and while attempting to withdraw it it doubled upon itself, and, with the beak of the lithotrite, became locked in the prostatic urethra. This was an unlooked for complication, for he could neither push the instrument back nor draw it forward. The lithotrite was then made to bite its way through the part within its jaws and was easily withdrawn. He finally succeeded, by means of the lithotrite, in removing the different fragments piecemeal.

Another curious accident had once happened to him, while doing perineal section for tight stricture. An assistant, by some misunderstanding, neglected to remove a probe which had been inserted into the perineal wound. Supposing it had been removed, Dr. Shrady, after dividing a penile stricture, introduced a sound through the urethra, when he heard something click within the bladder. At first he thought it was a stone, but on introducing his finger through the perineal wound he found it was the probe that had been pushed before the sound into the

bladder. By putting two fingers of the right hand into the rectum, and one finger of the left into the bladder, he succeeded in turning the probe, which was transversely placed, so that it corresponded with the long diameter of the viscus, and finally removed it by grasping its presenting end with a pair of forceps.

Dr. Shrady in this connection referred to a very ingenious expedient, which had been resorted to by Dr. A. T. Douglas, formerly of Rondout, N. Y., but now of New London, Conn. His patient, a young lad, had succeeded during masturbation in introducing a glass tube through the urethra into the bladder. Lateral lithotomy was performed, when the principal difficulty presented itself in seizing the smooth and slippery foreign body without at the same time crushing it. Finally, Dr. Douglas coated the inside of the jaws of the extraction forceps with softened molasses candy and withdrew the glass without trouble. The candy was selected as the best substance for the purpose, and in preference to wax, which was first selected, as no insoluble nidus would be left in the bladder.

Dr. Andrew H. Smith was reminded by these curious incidents of some which had come under his observation. One was that of a medical student who had introduced a catheter into his urethra. It had entered the bladder, and was causing him much pain, so that he was obliged to let it be known what had happened. A surgeon introduced a large sound, gave an opiate and a diuretic, and told him to hold his water as long as possible. In this particular case this method succeeded, for the catheter did come away with a heavy gush of urine.

In a case in which a child got a bean into the ear the attending physician feared pushing the bean forward should he attempt to use the forceps, and adopted the cute idea of introducing through a guide the end of a brush wet with shellac dissolved in alcohol against the bean, and when it had dried drew it out with the bean attached.

The speaker, when a student, had himself once had occasion to remove a foreign object at the bottom of a deep wound at the elbow, and fearing injury to important parts should he use the knife, he dilated the opening with a tent, and thus was enabled to extract the object without loss of a drop of blood.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, June 8, 1892.

H. P. Loomis, M.D., President, in the Chair.

The Microscopical Committee reported that the examination of the lungs presented at the last meeting by Dr. J. Lewis Smith showed them to be the seat of a typical catarrhal or lobular pneumonia. No micro-organisms were found.

Horseshoe Kidney.—Dr. J. S. Thacher presented a specimen of horseshoe kidney. He had met with this anomaly only once before, and that was in an infant whose kidneys were presented to the Society a few months ago. In that case there was only one pelvis and one ureter. The present specimen was taken from a middle-aged woman, who had had no symptoms which would lead to the suspicion of such an anomaly being present. Each ureter was partially occluded by calculi, which had probably caused the extreme pyonephrosis which was also present. The two kidneys were united at their lower portions by a considerable mass of renal tissue.

Dr. S. A. Armstrong said that this condition must be quite rare, as he had only met with it once in a considerable experience in the dead-house, and in this case there was normal renal tissue even at the point of fusion.

Dr. George P. Biggs reported a case in which the connecting portion of a horseshoe kidney had been torn almost completely through, as a result of an injury. The patient was an adult, who had sustained a fracture of the body of the third lumbar vertebra by a truck running over the lumbar region. The connecting portion of the kidney was directly in front of this vertebra, and, as a result of the laceration of its substance, a very free retroperitoneal hemorrhage had occurred.

Absence of One Kidney.—Dr. Thacher also reported two cases of absence of one kidney, and as a proof of this, exhibited the base of the bladder from each case, showing only one ureter. Each of these patients had lived past middle life without showing any symptoms referable to this condition. One died of chronic pulmonary tuberculosis, and the kidney was found to be about double the normal size, and apparently healthy. In the other case the single kidney was the seat of a very extensive chronic nephritis, yet notwithstanding the great damage done to this organ by the long-standing inflammation it was able to carry on the renal function for a long time. This patient also suffered from endarteritis, hypertrophy of the heart, suppurative pneumonitis, acute pericarditis, and cerebral softening.

Dr. Armstrong said that he had once seen, in an autopsy upon a man who died of uræmia, a very much degenerated kidney, which was found to have been doing all the work, as there was only a mere trace of the other kidney, which had apparently been diseased in fœtal life, and had therefore never developed.

Thrombosis of the Heart.—Dr. George P. Biggs presented specimens from a case of this kind. The patient was a male, fifty years of age, who was admitted to the New York Hospital on March 29, 1892. His previous history was rheumatic and slightly alcoholic. One year ago dyspnœa was first noticed on exertion, and last November the urine became scanty and high-colored, the dyspnœa increased, and œdema appeared. On admission the apex-beat of the heart was found to be in the fifth space, four and a half inches to the left of the median line; no murmurs were heard; the pulse was rapid but regular, and of fairly good quality; there was considerable fluid in the peritoneal cavity, and there was marked œdema of the lower extremities, and, to a less degree, of the abdomen. Examination of the urine showed it to have a specific gravity of 1.018, and an alkaline reaction, but no albumin or sugar was found at this time. During the ten weeks he was under treatment the urine remained scanty and high colored most of the time; the specific gravity varied from 1.012 to 1.032, and the quantity of albumin from ten to sixty per cent. Ten days before death he developed Cheyne-Stokes respiration with bloody sputum, and the diagnosis was made of cardiac thrombosis with pulmonary infarctions. The patient sank rapidly, and died on June 6th. The temperature remained normal throughout. At the autopsy there was found extensive general anasarca, and a considerable quantity of fluid in all the serous cavities. The heart was hypertrophied and dilated, and weighed, when emptied of blood, twenty ounces. On opening the left ventricle a firm, cylindrical thrombus, measuring 8½ ctm. in length by 2 ctm. in diameter, was found on the anterior wall. Its surface was perfectly smooth, and evidently no fragments had been broken off from it. The left ventricular wall, corresponding to this attachment, was very thin, measuring from ½ to 1 ctm. in thickness, whereas in other portions the thickness was 2 ctm. In the branch of the left coronary artery running down the interventricular septum was found an old calcified thrombus, which nearly occluded the vessel. This accounted for the atrophy of the wall, and its conversion into fibrous tissue. No other thrombi were found in the coronary arteries, but they were extensively diseased throughout, small calcareous plates being found in various places. At the extreme apex of the right ventricle there was also a smooth, firm, and unbroken thrombus, about three-fourths of a centimetre in diameter. There were no thrombi in the auricles; the valves were normal, and the muscle substance was rather pale and soft. The lower half of the lower lobe

f each lung was filled with infarctions, some red and thers whitish, due to a thrombosis of the pulmonary ar-ery. Over the area corresponding to the seat of these nfarctions was an acute pleuritis.

Dr. J. S. Thacher said that within the past few weeks e had met with an almost parallel case, occurring in a oy. There was a large thrombus in the left ventricle.

Ulcerative Endocarditis.—Dr. Biggs also presented pecimens from this case. The patient was a male, venty years of age, a laborer, who was admitted to the lew York Hospital on June 5th. Four days before admission he had a severe chill, which was quickly followed y pain in the thorax, dyspnœa, cough, mucous expectoration, headache, and fever. On admission his temperature was 104.5° F.; respirations, 40, and pulse, 108. Over the lower lobes of both lungs there were crepitation nd slight dulness; the heart-sounds were almost imperceptible, the abdomen, spleen, and liver were apparently ormal, and his general condition was fairly good, with ne exception of occasional slight delirium. The urine ad a specific gravity of 1.022, alkaline reaction, and the nicroscopical examination was negative. On June 6th ne temperature in the morning was 103° F., and at midight, 106.8° F., with a pulse of 140. During the latter art of the day petechial hemorrhages were noticed in ne hands and feet. On the following day there was a narked increase in the delirium, with rigidity of the ack of the neck; the temperature rose to 108° F., and ne patient died in the afternoon of that day. The temerature immediately after death was 110.6° F. There ad been no secondary chill. At the autopsy, which as made two hours after death, rigor mortis was slight. etechial hemorrhages and larger hemorrhages were found enerally distributed over the body, but more especially ver the hands and feet, and on the anterior surface of ne wrist were a few pustules. There was no abrasion nywhere on the surface of the body except over one nee-joint, where one of the pustules had ruptured. The eart was normal in size. Between two of the cusps of ne aortic valve, extending along the inferior surface, as a soft, friable thrombus, from which portions could e easily detached. On the right segment of the mitral alve there was also a soft thrombus, which had been early detached. There were numerous endocardial emorrhages. On the surface of the heart were numerus petechial hemorrhages just beneath the pericardium, nd three small pustules on the anterior surface of the eft ventricle. The lungs were the seat of extensive petechial hemorrhages beneath the pleura; the left lower obe was intensely congested, but there was no consolidaon; there was a recent pleuritis over the base of both ungs, and some blood-stained fluid in the pleural cavity. The spleen weighed one pound. Portions of this organ were very soft, and on section these softened areas discharged thin grumous pus. The kidneys were rather arge, their capsules non-adherent, and scattered over heir surface were numerous small abscesses. and a few white infarctions which had not yet broken down. There was a slight deposit of fibro pus over the surface of the left lobe of the liver, and this lobe showed a large number of small abscesses on its surface, about the size of a pin's head. There was a small infarction near the base of the bladder, and this viscus contained about one ounce of purulent urine. Numerous infarctions were scattered through the intestinal canal. An examination of the pus from several of these abscesses showed apparently pure cultures of the staphylococcus. There was a large increase of serous fluid in the meshes of the pia mater of the brain and cord, but no purulent exudation. There were occasional small thrombi in the vessels, and in the lumbar portion of the spinal cord there was one small hemorrhage into the substance of the cord. The mesenteric glands were slightly swollen, and there were also three large cheesy masses from 1 to 1½ ctm. in diameter, scrapings from which showed large numbers of tubercle bacilli. The lungs, together with all the retroperitoneal and bronchial glands, were searched for further evidence of this disease, but none was found. No diagnosis was made during life.

Dr. Armstrong suggested that the presence of purulent urine in the bladder at the autopsy offered a possible clue as to the way in which the staphylococci gained entrance to the system, as he had known of fatal septicæmia resulting from the introduction of a catheter.

Dr. Biggs said that a careful examination of the entire penis had shown this organ to be perfectly healthy, and the purulent urine was evidently of very recent formation. He considered that the condition of the kidneys and of the bladder was a part of the general condition.

The Society then adjourned.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

VIVISECTION AT THE CHURCH CONGRESS—THE OBSTETRICAL SOCIETY—DISCUSSION ON THE VALUE OF ABDOMINAL SECTION IN CERTAIN CASES OF PELVIC PERITONITIS—SIR RICHARD OWEN—THE EPIDEMIC OF SCARLET FEVER.

London, October 15, 1892.

A discussion on vivisection took place at the Church Congress just held at Folkestone, and I understand that matters were rather lively. Dr. Wilks, Mr. Victor Horsley, Dr. Armand Ruffer, and the Bishop of Edinburgh maintained that experiments on animals were justifiable. Sir Andrew Clark was unable to be present, but sent a telegram expressing his strong sympathy with experimental research. Sir James Paget and Sir George Humphry sent letters defending the medical side of the question. Bishop Barry and the Bishop of Manchester spoke in opposition to the practice. Dr. Wilks pointed out that much prejudice and misconception had been brought in. The very use of the term "vivisection" prejudiced the question, since it implied the dissection of a living animal, whereas most experiments caused no more pain than a prick, or amounted only to the administration of a drug or some patent article of food. There had been no legislation on the subject until recent times, and that was directed not against the cruel practices of trade or sport, but against individual acts of cruelty distasteful to the observer and not affecting his personal interests. What the majority approved was not opposed. Mr. Horsley made a vigorous onslaught on the antivivisectionists, and scathingly exposed the *suppressio veri* of which Miss Cobbe and other lay opponents of vivisection have been guilty. Mr. Lawson Tait, he said, was inconsistent, for he denounced experiments in speaking to the general public, but as a member of the Scientific Grants Committee of the British Medical Association he did not oppose the granting of six hundred pounds a year for the furthering of the progress of medicine and surgery by scientific experiment. Mr. Horsley urged that the agitation was now only nominally humanitarian; it was really a phase of the line of thought which was constantly seeking to oppose science in the name of religion.

The Obstetrical Society held their first meeting for this session last week. Dr. Cullingworth, obstetric physician to St. Thomas's Hospital, read a paper (based on a personal experience of fifty cases) in which he discussed the value of abdominal section in certain cases of pelvic peritonitis. He maintained that recurrent attacks of pelvic peritonitis in the female ought always to lead to a strong suspicion of the existence of chronic disease of the uterine appendages, and to careful bimanual examination. Purulent collections in the pelvis were very apt to set up recurrent peritonitis, and he believed they were more common than was generally supposed. Where distinct swellings were found in the posterior quarters of the pelvis, in connection with recurrent attacks of pelvic

peritonitis, surgical relief was usually indicated; generally speaking, the sooner such relief was afforded the better. In purulent inflammation of the mucous lining of the Fallopian there was no outlet for the pus; a very slight swelling of the mucous membrane sufficed to block the tube at its uterine end, and any pus present in the tube must then either remain pent up in the tube or be poured out through the fimbriated end into the peritoneum, in either case becoming a source of danger. Salpingitis being painless, the wall of a pyosalpinx might be on the point of perforation before an acute attack of peritonitis gave warning of the presence of serious disease. It was safer to attack cases of pelvic suppuration from above than from below. Suppurating tubo-ovarian cysts were usually the result of ulceration on the tubal side of the adhesion between the tube and ovary. The author thought the immediate results were more satisfactory after complete than after partial operations. One of the chief risks in separating and removing inflamed tubes was the liability to mistake thickened and adherent intestine for diseased tube; the way to avoid error was to trace the tube from its uterine end outward. The exceptional persistence of pain after operation for gross lesions of the uterine appendages was generally to be explained either by omental or intestinal adhesions, or by the co-existence with the actual disease of a neurotic condition, of which the pelvic pain was a mere local expression. He regarded tubal disease in the virgin as being generally tuberculous, and thought that hydrosalpinx was in most cases merely a form of retention-cyst, due to occlusion of the distal end of the tube from without. Simple collections of serum, both large and small, were apt to form beneath the peritoneum covering the tube and broad ligament in chronic cases of pelvic inflammation; the best way to treat these cysts, after exposing them and making certain of the diagnosis by abdominal section, was probably by simple puncture and evacuation. Dr. Cullingworth observed that hæmatosalpinx, though usually due to tubal gestation with apoplexy of the ovum, was sometimes an incident in the course of a chronic salpingitis, and in these exceptional cases the walls of the distended tube, instead of being attenuated by the distention, as Bland Sutton had shown them to be in tubal gestation, were thickened by inflammatory deposits.

An animated discussion followed the reading of Dr. Cullingworth's paper. Dr. John Williams remarked that though he differed widely from the author both in conclusions and in practice, he felt personally indebted to him for bringing his paper before the Society, and believed the discussion would help to place the practice of opening the abdomen for pelvic disease on a sounder and more reasonable basis. He thought the title of the paper was misleading, for on examining the cases he found that twenty-four out of the fifty were cases of ovarian or other cysts, as to the propriety of removing which there was no doubt. He did not think it was justifiable to operate for tuberculous disease of the tubes, and especially where tubercle was found in other organs. The mortality of the author's cases was high, but he did not think it was higher than the mortality throughout the country generally. Many of the cases presented great difficulties. There was a mortality which necessarily arose from the difficulties of the operation, and this mortality was eliminated when operations of this kind were undertaken for trivial deviations from health. When considering the mortality of the operation, the mortality from the disease should be borne in mind. He had seen only two cases of death from ruptured tubes or abscesses, and he calculated that with a mortality of eighteen per cent. the mortality of the operation was several hundred times greater than that of the disease. As to permanent results, it was impossible to trace all patients operated on in a place like London, and under a government such as ours; that could only be done where everyone was under police supervision, as in Germany.

In about half the cases traced by Dr. Cullingworth more or less pain was present after the operation. In far as he could gather from the most reliable statisti about thirty per cent. of patients from whom diseas appendages had been removed were cured by the ope tion, many more were benefited and cured by time a other treatment, while the rest continued to suffer.

Mr. Alban Doran said it was good surgery to insu the escape of the pus and other products of inflamm tion, and Dr. Cullingworth's practice was sound in so f as that object was gained. Referring to MM. Péan a Segond's practice of vaginal hysterectomy for the cure pelvic suppuration, Mr. Doran said British surgeo would hardly adopt that operation. The patients oft recovered because the wholesale cutting allowed the fr escape of pus. Amputation of the thigh for hip joint d ease might also cure the patient by allowing of the fr escape of pus. In both cases good surgery demanded t same object by other means which did not include pe ous mutilation.

Dr. Champneys said he agreed in objecting to the ti of the paper. Pelvic peritonitis was a complication of large number of known diseases; he thought a good nu ber of these could be, and had been, diagnosed befo operation. Pelvic peritonitis was rarely dangerous life, and he was not convinced that it required abdomir section except in rare and exceptional cases.

Dr. Playfair spoke of the value of Dr. Cullingworth paper, but said that he could not at all endorse many the author's conclusions. Everyone would probably agr with the general principle that, when marked structu disease of the uterine appendages existed connected wi suppuration, a free exit should be given to the pus, and th such exit was often best obtained by laparotomy. But seemed to him that the author's surgical zeal carried hi far beyond this, and that his axioms, if generally adopte would lead to much rash, hazardous, and often unnece sary interference. He objected altogether, for exampl to the proposition that surgical relief was usually inc cated in cases where distinct swellings were found in th posterior quarter of the pelvis in connection with recu rent attacks of pelvic inflammation. Who could not r call many such cases which eventually recovered? Wh disastrous results would follow if every youthful and a dent gynecologist said: "Here is a swelling in the po terior quarter of the pelvis. Dr. Cullingworth says must be at once dealt with; therefore I must open th abdomen." That might possibly be all very well with D Cullingworth's surgical aptitude and experience; b even in his hands nearly one out of every five of his p tients died. What would be the results in hands le skilled?

The debate was adjourned until the next meeting the Society.

Sir Richard Owen continues about the same.

The scarlet fever epidemic in London shows no sig of abating. Eighty fresh cases were admitted yesterd into the hospitals of the Metropolitan Asylums Boar and three thousand six hundred and fifty eight cases scarlet fever are now under treatment in these hospital The mortality, however, continues very low.

Treatment of Cystitis.—Dr. Otis, writing on this sul ject in the *Journal of Cutaneous and Genito-Urinar Diseases* for August, 1892, does not favor local treatmer in the early stages of the disease, although he says that i some cases injection of a solution of silver nitrate int the prostatic urethra has produced a cessation of pai and of frequent urination. When the affection become subacute he recommends the injection of mild solutio of silver nitrate into the bladder, so as to fill it. In son cases he has used injections of bichloride of mercury s lution with satisfactory results, and in the chronic cystit of old men, especially when a good deal of mucus wa present, injections of salicylic acid have been found t be very beneficial.

ME THOUGHTS ON CONTRACT MEDICAL SERVICES.

To the Editor of The Medical Record.

R: In the issue of the Medical Record of October 1, 892, page 412, I noticed that the American Medical ssociation has under consideration the discipline of about x thousand railroad surgeons who practise under con- act. The word "contract" as applied to the services the medical profession is odious and repugnant, and is not to be wondered at and does not elicit any sur- ise when the profession, as represented by the Ameri- n Medical Association, protests against this character service. It must be borne in mind, however, that the ntract service to railroad companies is far more munerative, comfortable and pleasant than the con- act medical service of the army, and to this branch of ntract service, which is the most humiliating to a pro- ssional man, I think the American Medical Association ught to direct its attention primarily. The army con- act surgeon is a reputable physician; he performs xactly the same duties as the commissioned medical fficer; he is generally assigned to the worst or most isagreeable posts; he is paid a little more than half the lary of the medical officer whose duty he performs; he as no status with the troops, and he is not allowed to ear a uniform, neither is he allowed any vacation, with ay, whether he is taken sick while in the service or isabled by wounds received while in discharge of his uties.

Efforts have been made at different times to obtain gislation by Congress to ameliorate the condition of our rofessional brethren, who are contract surgeons, and Pro- essor A. Reeves Jackson, of Chicago; Drs. R. J. Dunglis- on, of Philadelphia; W. Thornton Parker, of Massa- husetts; William Balser, of New York; N. A. Robbins, f Brooklyn; H. A. Robbins, of Washington; and many thers, have labored zealously to accomplish this end, but ave been thwarted in their praiseworthy efforts by the urgeon-General's office at Washington. Even a bill hich was introduced in Congress by the Hon. E. J. Dunphy, and had for its object the granting of honorary r brevet commissions to contract surgeons who per- ormed the duties of medical officers during the late Civil Var, and wore the uniform of a first lieutenant of the rmy, which would cost the Government nothing but the aper it was written on, and which affected the status of ,532 reputable physicians, who enlisted for a period of ot less than three months, in accordance with army egulations and the second article of war, and which was he only branch of the medical staff of the army that eceived commendation as being composed of some of he "most eminent physicians and surgeons of the ountry,"[1] was reported on adversely by Congress, prob- bly on account of a report containing misstatements aade to the Secretary of War by the Surgeon-General of he Army (now retired), and by him (the Secretary of War) eferred to the Military Committee of the Senate and Iouse of Representatives.

This large body of physicians, with those of the regular rmy, volunteers, and militia, represented the patriotism of the medical profession in the late Civil War, and it eems to me, as a grateful recognition of patriotic ervices, that this slight request, which was fair and just, ought to have met the approval and assistance of their professional brethren in the Surgeon-General's office nstead of its persistent opposition. The following is an bstract of a letter which was sent me, which, I think, vill justify the committee of the American Medical Association in investigating this peculiar character of ervice exacted of the medical profession, and which I elieve, should be condemned.

"——, July 28, 1892.

I declined to accept a new contract in the army in ——, which gave me only $75 a month, and the service to be at one of the worst posts in ——, and one where there was no outside practice. I had served faithfully for twenty-one years continuously in ——, and this is what was offered me. I served in the war a couple of years, and, in all, my service amounts to about twenty-five years, and I am —— years of age. Now, I think it is a burning shame the manner in which we have been treated. My army life has, I believe, unfitted me for practice in this city, or anywhere, in fact, where there is but little moving about, and I am very loath to attempt it. I have been thinking that perhaps you could put me on the way to secure a position on a steamship plying between New York and Europe," etc.

This is only one instance of the ultimate result of contract medical service with the army. There is still employed in this manner another physician, who completed twenty-seven years of contract service, and who was wounded and lost an arm while performing his duties as a medical officer in an engagement. I am pleased to hear that the American Medical Association intend to take action on the contract service of physicians, but I trust it will commence with its professional brethren who are so unfortunate as to be obliged to accept the position of "contract surgeons" in the army in time of peace, with its small pittance. I would be pleased to give the Committee of the American Medical Association any information I possess on this subject.

John T. Nagle, M.D.,

Formerly Acting Assistant Surgeon, United States Army, and Commissioned Assistant Surgeon, 192d New York State Vol. Infantry; in charge of Third Division Cavalry, Camp Stoneman, Army of Potomac; Chief Medical Officer of Second and Third Divisions, and Reserve Brigade Dismounted Cavalry, Army of Potomac, which left Camp Stoneman, July 5, 1864, to join the Army of West Virginia, etc.

New York, October 17, 1892.

[1] Medical and Surgical History of the War; Surgical vol., part iii., page 901.

New Instruments.

A PRACTICAL TRANSILLUMINATOR.

By CHEVALIER JACKSON, M.D.,

PITTSBURG, PA.

The applications of transillumination in the examination of the upper air passages, as practised by Voltolini, are summarized by MacBride[1] as follows:

"1. Allowing a strong light to fall on the exterior of the nose, and then introducing a speculum from which all light must as far as possible be excluded.

"2. Throwing a strong light into one nostril while looking into the other.

"3. Introducing a mirror, as in posterior rhinoscopy, and throwing upon it a strong light while the anterior nares are inspected.

"4. Introducing an electric light into the mouth and inspecting the nose.

"5. Introducing a specially constructed electric light into the naso-pharynx. On looking into the mouth the velum is seen to be illuminated, while the introduction of a nasal speculum will enable the observer to examine the anterior nares, especially in their posterior parts.

"6. Introducing an electric lamp into the mouth, and observing the transparency of the antrum of Highmore and cheek."

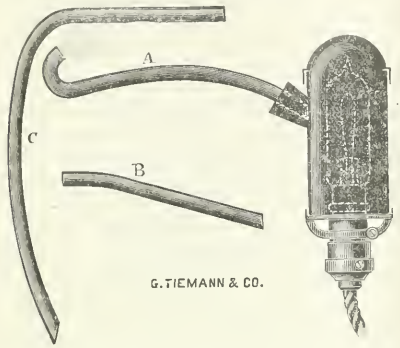
Voltolini's method of examination of the larynx by transillumination consists in the application of a strong light externally on the neck, in the region of the crico-thyroid membrane, while the larynx is examined with the laryngoscope in the usual way, but without other light than that transmitted through the tissues.

Vohsen has demonstrated the examination of the frontal sinus by transmission of light through the inner wall of the orbit.

[1] Diseases of the Throat, Nose, and Ear. London, 1892.

All these procedures, as practised, are not very practical, mainly because of the use of little lamps of low voltage (two to twelve). Such lamps get hot, often burn out, are expensive to replace, and at best furnish but little light; they require batteries or resistance coils, or both, and have many other drawbacks.

The writer has used transillumination for some years in his daily work, and finds it no less practical than ordinary rhinoscopy. In many cases it has added invaluable information otherwise unobtainable.



The apparatus used, which may be called a transilluminator, is shown in the cut. It consists of a German-silver lamp-box, polished within, blackened without, and containing a 50-candle-power incandescent lamp, of 50 volts for Westinghouse current, or 100 volts for Edison current. Projecting from the side of the box is a metal neck, into which fits a perforated asbestos cork. Through this cork passes a glass rod (A), which is silvered all over except the ends, the silvering being protected by a layer of enamel. The brilliant light within the box is transmitted axially through this rod, without lateral radiation, and issues from the distal end with undiminished intensity. A cloth skirt, not shown in the cut, hangs from the lower rim, preventing any radiation of light from the open air channel; and from the bottom of the lamp socket issues an ordinary flexible double cord, two metres in length, ending in an "attachment plug" An incandescent lamp anywhere can be withdrawn from its socket and this "plug" substituted, when the transilluminator is ready for use.

When the slightly warmed distal end of the glass rod is passed up behind the palate, and the patient's lips closed, inspection per anterior nares shows the nasal chambers to be brilliantly illuminated. A Lefferts hook should be used to draw forward the palate, while the tip of the rod goes into place, after which it is removed, and patient closes his lips around the shaft of the rod. A Chevalier Jackson tongue-depressor facilitates matters in retching patients; but it, too, must be removed after the rod is in place.

When the glass rod is placed on the tongue, distal concavity forward, brilliant and practical transillumination of the antrum is had. In this position, too, the nasal cavities are brilliantly transilluminated, the outer wall under the overhanging inferior turbinated more thoroughly than can be done in any other way. The single curved rod (B) is used where its shape is more convenient. The distal end in one nostril brilliantly illuminates the other nasal chamber; placed externally over the thyroid cartilage, the larynx may be seen with the laryngoscope to be a bright red glare. Thus can be executed the whole list of Voltolini's procedures, and many others. The room should be dark to get the best results.

The glass rods never become heated, wherein is a great advantage; they can be passed anywhere. The lamp-box, of course, does get hot, but this is not objectionable.

If desired, however, it can be made double-walled, w a layer of asbestos between, though this makes an exp sive instrument, whereas the other is cheap. If anyo has any use for a self-illuminating laryngoscope, a go one can be made by attaching the mirror shank to a c lar made to fit around the distal end of the single-curv glass rod.

Finally, it may be mentioned that the instrument w transilluminate a hydrocele, and with a short thick r will shoot a beam through an abdominal dropsy. T writer has passed a rod, shaped as shown at C, into t stomach, the light glowing brightly through the anter abdominal wall. While this has been put to no pr tical use, it may prove of service.

A DILATING TROCAR.

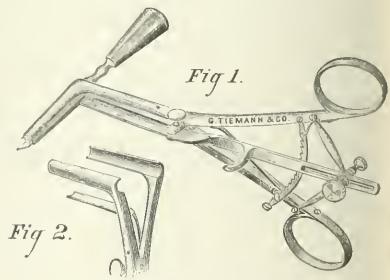
By DAVID C. LEWINTHAL, M.D.,

NEW YORK.

HAVING frequently had the occasion to treat cases pleuro-empyema under conditions in which operative terference, such as resection of rib or incision, wou through one reason or another, be impossible, I have be led to devise this little instrument, which I now present the profession.

It consists, as the appended cut clearly shows, of three-bladed dilating cannula and a trocar. The mid blade can be moved independently of its fellows, th enabling one to prolong the opening in any desired rection. A ratchet attached to the handles keeps t blades of the dilating cannula open when in use, while rather stiff spring shuts the instrument and keeps t trocar in place.

The method of using this dilating trocar is simp. An anæsthetic is, in my opinion, unnecessary in m instances. After a preliminary disinfection of hands, strument, and field of operation, the dilating cannula w trocar in position is thrust through the chest-wall, ho ing it so that the two lateral blades approximate t upper and lower ribs respectively, leaving the third in-



pendent blade free to work on the soft tissues betwe the ribs. The handles are now pressed together, thus se arating the three blades. The trocar is rapidly remov and the drainage-tube or tubes are introduced. The lator is now slipped out, and the operation is complet The whole procedure, done with care and deliberati need not last over half a minute.

I will here state, because it has been doubted by ph sicians, that the tissues of the intercostal space are ve yielding. It is quite easy to make an opening of a size by blunt dilatation without resorting to cutting struments at all. It may perhaps be advisable to ma a preliminary incision through the skin where an openi of large calibre is desired.

Considering the advantages accorded by this inst ment, it seems to me that it will entirely do away wi the method of incision so much in vogue in this count at the present time.

The dilating trocar has been used by me in several

stances, and also once by Dr. J. Horn, of this city. It has worked admirably in all cases. Although it has not as yet been put to such use, it has been suggested to me as being well adapted for opening cases of abscess of the lung, as the blades of the dilator would act as temporary tampons, until the drainage-tube could be introduced.

To sum up, the advantages offered by this instrument are: 1. The doing away with the anæsthetic. 2. The doing away with assistants. 3. The short duration of the operation. 4. The slight amount of shock incident to it. 5. Its safety as regards wounding the intercostal vessels. 6. The ease with which it is manipulated, thus putting it within reach of those who would or could not use a knife. 7. Patient fearing an operation requiring an anæsthetic would readily yield to it. 8. Its possible use in cases of abscess of the lung.

The instrument was made for me by Tiemann & Co., of this city, to whom I am indebted for the fine workmanship and its perfect mechanism.

I recommend this dilating cannula and trocar to my colleagues, and will be grateful to hear of the success it has met in their hands.

163 Henry Street.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 22, 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	51	15
Scarlet fever	62	6
Cerebro-spinal meningitis	2	4
Measles	42	3
Diphtheria	46	17
Small-pox	3	0
Cholera	0	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0

Extra-uterine Pregnancy.—Dr. J. Whitridge Williams, of the Johns Hopkins Hospital, Baltimore, writes that he is engaged in the study of extra-uterine pregnancy from an anatomical standpoint, and he appeals to those who come in contact with this class of cases to aid him by sending him any specimens which they may meet. The specimens should be handled as little as possible, and as soon as possible after the operation placed in jars containing cotton, and covered by more than their bulk of ninety-five per cent. alcohol, or Müller's fluid, and sent to the writer. They should also be accompanied by a brief outline of the history of the case and the measurements of the fresh specimen. To any one aiding him in this way, he says that he will be glad to send a report on the specimen, and in his article will, of course, make due mention of those who have thus assisted him.

Education as a Therapeutic Measure.—In a paper read before the Social Science Association, on "Education in the Treatment of Nervous Girls," Dr. Louise Fiske Bryson says, in substance, that the therapeutic advantages of education are to be found in the study of subjects of permanent and universal interest, subjects that hold their own in youth and age, and when everything else fails or is outgrown. The particular interests of value, as discipline and delight, that time cannot wither nor custom stale, are general literature, history, social economics, and objective science. Shorter school hours, more time in the open air, more housework and accomplishments requiring bodily activity, better manners—which are minor morals—strict attention to neatness and conventionality in dress, the study of objects close at hand, familiarity with the recorded thought of mankind and knowledge of the principles that underlie the social condition, the government and practical politics, together with absolute regard to bodily health and sufficient rest, are some of the elements necessary to the real happiness and welfare of the nervously weak. Their shrunken individuality must be expanded by means directed at once toward repression of egotistic instincts, toward the enrichment and orderly arrangement of ideas, and through multiplication of acts and external relations, toward the energizing of the insufficient or diseased will. The education of nervous girls can be seasoned with something of art and a taste of foreign language. But the case is hopeless, in point of health when the æsthetic side is brought into undue prominence. Theoretic dressing, always dangerous, is especially disastrous for the class under consideration. To be like all the rest of the conventional world in mind, body, and estate, is their best ideal. The first duty of the guardians of nervous children is to instill the spirit of self-denial that has for its outcome graces of speech and movement, silence and self-command, pure tones and distinct utterances, together with tact and good spirits. The effort to be kind and sympathetic, in spite of physical weakness, lessens introspection and mental indolence and rouses activities otherwise dormant. Armed with grace and graciousness, uplifted by the society of good books, familiar with events and persons from whom civilization sprung, cognizant of the laws that govern the social condition, and with powers of observation and discrimination trained by study of science that "concerns all mankind for all time," it is possible for the nervous girl to become amusing and delightful as a companion, to grow in reliance and self-poise, and to attain value and usefulness as a citizen.

Sulphonal Poisoning.—Dr. J. B. Marvin describes a case where death followed two hundred and forty grains taken in five doses, two in the afternoon, and three the next morning. On the following evening the patient was sleeping heavily; pulse under 100; respiration, 32. When attempts were made to rouse him, he would yawn and turn over. The next morning his sleep was more profound, the respiration more rapid, the pulse faster and weaker; both pupils reacted to light, and there was no paralysis; the secretion of urine was abundant. The treatment was nitro-glycerine hypodermically.—*Boston Medical and Surgical Journal.*

Types and Treatment of Nervous Women.—Women have been much in evidence of late, especially the nervous variety. Of these there are three types to be met with in this part of the country, and are thus described by Dr. Charles L. Dana, in the *International Medical Magazine*, June, 1892. The first type consists of girls between the ages of fifteen and twenty-five, unmarried, anæmic, and showing a varied and peculiar train of symptoms. The second embraces nervous women between twenty-five and forty. And the third, those at the period of the climacteric. Nervous symptoms of the menopause are mainly vaso motor, and are in a measure due to physiological changes. About two-thirds of the nervous women who seek medical aid belong to the second type. Next in point of numbers come those at the climacteric. Nervous girls stand third numerically. There are comparatively few nervous women over sixty; and this quiet fact is, in many instances, at least, one definite and tangible compensation for the loss of youth. Young, nervous women are thin, anæmic, dyspeptic, of poor nutrition, and with special senses keen to the point of hyperæsthesia. The pupils are mobile, the heart irritable, the vasomotor centres unstable, and the extremities cold and clammy. These girls have spinal pains, and headaches of migrainous and other types, and suffer more or less at the menstrual epoch. They are quick, vivacious, observant, impatient, living on their "nerves," fond of excitement and indulging in amusements, for which they pay the penalty by prolonged exhaustion.

The second type is made up of what might be termed the wreckage of nervous girls and of healthy young women for whom life and domesticity have proved too great a burden. They are usually married, and sometimes prolific mothers, though the worst cases are among the childless. In this type, nervousness, weakness, insomnia, dyspepsia, morbid and depressing ideas, headaches and neuralgias, vertigo, tremor, and vaso-motor symptoms are dominant. Many factors produce nervousness in women. The causes are different and complicated in almost every case. In young women an original instability of the nervous centres is first to blame, then an irrational method of education, too little exercise and improper food, late hours, too little sleep and over-indulgence in amusements. The worst combination for bright young women is social dissipation and excess in the matter of study. It is impossible to indulge in a ceaseless round of gayety and be a good student too. Strain and worry then become a part of daily life, leading to disaster sooner or later. Among causes producing nervousness during the mid-age period—from fifteen to forty—are miscarriages, excessive child bearing, sterility, domestic troubles, fright, shock, malaria, infectious fevers, anæmia, and uterine disease. Treatment should be directed toward mitigating the constitutional neurotic taint, toward relieving the system of poor blood and irritants circulating in it, and toward removing exciting causes, whether reflex or those of environment. The wise selection of various general and symptomatic remedies is also an important part of the plan. The proper diet for most nervous persons is an essentially nitrogenous and fatty one, because it furnishes the most nourishment with the least expenditure of force. A regular life, work or exercise in the open air, plenty of sleep, are mentioned as the commonplaces of therapeutics. These ideals are not always attainable, even when intentions are of the best and docility unbounded.

The secretions of women are, as a rule, more acid than those of men, and this may possibly account for the more common nervous irritability of women. Three or four pints of water daily, to wash out the impurities, are to be prescribed, together with hot baths for a short time weekly, and cold baths daily, with vigorous rubbing, to aid elimination of dyspeptic, lithæmic, rheumatic, or other irritant. Alkaline waters may be given; or of a mixture of Rochelle salt, half an ounce; citrate of potassium, one ounce; bicarbonate of potassium, two ounces. A heaping teaspoonful may be dissolved in a tumbler of water, either hot or cold, and taken every morning. Mineral acids after meals, preferably muriatic acid, relieve the dyspepsia. Respiratory exercises are useful. Bottles, adjusted with rubber and glass tubes, and holding a gallon each, furnish a convenient apparatus for blowing a gallon of water from one bottle to the other. (Respiratory exercises according to Ling's principles are also of great service.) Drugs that are of value belong to the class of nervines, antispasmodics, and tonics. The bromides, when used, should be given in fifteen-grain doses, three times daily, for two weeks, then discontinued for a week before treatment is resumed. Valerianate of zinc, or bromide in the elixir of valerianate of ammonium, serves in hysterical attacks. Tincture of sumbul, of about the same value as valerian, is less disagreeable in odor. Nux vomica, which is better than strychnine, and arsenite of sodium, quinine, and iron, may be the only drugs required. Nux vomica should be given in increasing doses, up to thirty drops, three times a day, watching carefully to determine what dose will produce the best effect in each particular case. It should be given about three weeks continuously, and then there should be an interval of two weeks, this line of treatment ending in about three months. For nervous women who are greatly depressed, to the nux vomica three or four drops of the tincture of opium can be added. When there is much melancholy, quinine is of benefit; when, however, it cannot be borne in ordinary doses, Warburg's tincture is often tolerated. Salicin made from the willow is useful in neuralgic and arthritic cases.

Mechanical tonics, such as the water-cure, are often of greater value than medicines. There are three ways of using water as a mechanical tonic in the treatment of nervous women. First, in the form of a lukewarm bath, 95° F. for twenty or thirty minutes, generally at night, but it may be given at any moment of excitement or nervousness. The second is the wet pack, which "tends to increase the rapidity of tissue metamorphosis, indirectly to increase assimilation, and therefore promote absorption of nutritive material from the digestive canal," is tonic as well as sedative in its action. The third method is the shower, of which the best form is the Charcot or Scottish douche. The patient is placed about ten feet from the spigot, and cold and hot water are alternately directed upon the back. When this cannot be obtained, the ordinary shower-bath may be used, the patient standing in warm water in the bath-tub, and using first warm water and then cold water, from one to three minutes. If this cannot be borne, the next best thing is for the patient to stand in an ordinary bath tub in a little warm water, and sponge the body thoroughly with cold water. Electricity two or three times a week is useful, where there is spinal irritation or hysteria, in the form of a strong galvanic or faradic current. The most powerful tonic is a combination of the galvanic and faradic currents by means of the De Watteville switch. Static electricity has the most effect upon nutrition and metabolic changes. Athletics for young women is a field of promising chances. All girls should be examined, shown where deficiencies exist, and taught to make them up by gymnastic exercise. The author of the paper is evidently in sympathy with his subject, promptly acknowleding that "God made the women to match the men." Half the women in America are nervous. But they have no monopoly in this particular business, since to every three nervous women there is one nervous man. And one nervous man is quite a match for two nervous women.

Zola on Amputation at the Shoulder-joint.—M. Zola in his novel, "The Downfall," gives a dramatic description of a surgical operation: "The business that lay before him now was the resection of the shoulder-joint in accordance with Lisfranc's method, which surgeons never fail to speak of as a very pretty operation, something neat and expeditious, barely occupying forty seconds in performance. The patient was subjected to the influence of chloroform, while an assistant grasped the shoulder with both hands, the fingers under the armpit, the thumbs on top. Bouroche, seizing the long, keen knife, said 'Raise him!' seized the deltoid with his left hand and with a swift movement of the right cut through the flesh of the arm and severed the muscle; then, with a deft rearward cut, he disarticulated the joint at a single stroke and presto! the arm fell on the table, taken off in three motions. The assistant slipped his thumbs over the brachial artery in such a manner as to close it. 'Let him down!' Bouroche could not restrain a pleased look, as he proceeded to secure the artery, for he had done it in thirty five seconds. All that was left to do now was to bring a flap of skin down over the wound and stitch it in appearance something like a flat epaulette. It was no only 'pretty,' but exciting, on account of the danger, for a man will pump all the blood out of his body in two minutes through the brachial, to say nothing of the risk there is in bringing a patient to a sitting posture when under the influence of anæsthetics."

Drachm or Dram.—There has been some discussion among the doctors and druggists as to whether "drachm" or "dram" is the better spelling. Some of the large drug-stores settle the matter by spelling it "drachm" in the prescription department, and "dram" at the rear of the store, or at the soda-water counter.—*Florida Medical and Surgical Reporter.*

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Original Articles.

BLOOD IN THE URINE—HOW TO DISCOVER ITS SOURCE AND WHAT TO DO FOR IT.[1]

BY L. BOLTON BANGS, M.D.,

SURGEON TO ST. LUKE'S AND CHARITY HOSPITALS; CONSULTING SURGEON TO THE M. E. HOSPITAL, BROOKLYN; PROFESSOR OF GENITO-URINARY SURGERY AND VENEREAL DISEASES IN THE POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

AT the outset of this discussion I assume that the term "blood in the urine" refers to the presence in the urine of normal or intact blood-disks, and that no reference is to be made to that pathological condition known as hæmoglobinuria, or hæmatinuria. This condition, in which the corpuscles become dissolved in the blood, the hæmoglobin thus set free being excreted by the kidneys, is occasionally met with, but belongs to medical practice (strictly speaking) and is not pertinent to our subject. It must also be premised that blood in the urine is but one symptom, and may occur in many different pathological conditions. It is usually associated with other symptoms, but its mere presence is not diagnostic of any particular lesion, nor do its characteristics determine definitely from which part of the genito-urinary tract it exudes. It is true that it is often the first symptom for which treatment is sought, and although it may be the most dangerous, it is not necessarily the most diagnostic one. We must still remember that although the hæmaturia may be the most prominent symptom, it is but one of a group. The blood in the urine is but one of the factors in the diagnosis of its cause. In quantity it may vary from a few drops to a very great volume, enough to jeopardize the life of the subject, and it may be persistent, continuously present, or intermittent. When intermittent, the intervals may be from a few days to several years. In my opinion, neither its color nor its quantity will enable us to decide definitely whence it comes. Writers have declared that when the blood in the urine is bright red in color it indicated hemorrhage from the bladder; and when it was blackish or deeply intermingled with the urine, it indicated renal hemorrhage. But in my observation the color alone does not indicate its source, for in some lesions of the bladder we often have blood which is thoroughly intermingled with the urine, and the latter may be as black or deep in color as the urine which comes from the kidney. And on the other hand, I have seen bright red blood, sufficient in quantity to coagulate in the bladder, come from the kidney.

Blood may find its way into the urine from any of the anatomical divisions of the genito-urinary tract, or from one or more of these divisions at the same time. I believe, from my own observation, that blood in the urine from a source in the urethra may be overlooked. It is not sufficient to say that a "urethrorrhagia," whether from a traumatism or otherwise, is diagnostic in itself, for I have seen a sequel of gonorrhœa in the urethra permit blood to exude which escaped only with urination; nor is it enough to say that blood from the urethra will find its way out in the intervals of urination, and has no relation to the act. Blood can escape from this canal during the act of urination. The physiological action of the urethra may cause blood to escape from a diseased area sufficient in quantity to be commingled with the urine as the latter passes, and there be no appearance of it at any other time. The history of antecedent or present urethritis, and the absence of bladder or kidney symptoms, together with the fact that the blood is comparatively minute in quantity relative to the amount of urine, will lead us to suspect the urethra as the source of the hemorrhage, but the endoscopic tube will make the diagnosis definite. Just here permit me to suggest two cautions which may seem trite and puerile to you, but as I have seen it necessary to eliminate this troublesome symptom, I will remind you that sometimes the tube, when introduced into an inflamed urethra, especially if it be made to enter the membranous or prostatic portions, may press blood out from a hyperæmic locality. Also it must be remembered that in some individuals a granular or subacute urethritis in the bulbous portion of the urethra will so irritate as to cause the frequent and urgent calls to urinate which we are apt to associate with lesions of the posterior urethra or neck of the bladder. Without the use of the tube in such a case we might be led to consider the bladder as the source of the hemorrhage. I think I can appeal to your experience that this has at times puzzled you and obscured your diagnosis. Of course, the treatment of the diseased urethra will in such cases cure the hemorrhage. The diagnosis of hemorrhage from the urethra, in any of its parts, due to traumatism, surgical or otherwise, is determined by its cause and in its treatment is subject to ordinary surgical principles.

That the ureters may furnish blood for admixture with the urine as it traverses these canals there can be no doubt, as anyone who has ever witnessed the effect of an impacted calculus will admit; but as the pathological conditions of the ureters are so infrequent and so obscure, I will limit my part of the discussion to the differential diagnosis between bladder and renal hemorrhage.

The answer to the question as to whether the source of the hemorrhage is in the bladder or kidneys is often a very troublesome one. It introduces points of great complexity, and sometimes, indeed, the hemorrhage may be found to be from both the bladder and the kidney. We may say, in general, that hemorrhage from the bladder is much more abundant, more likely to clot, more persistent, and, when intermittent, with shorter intervals than that from the kidney. It is usually associated with some symptom of irritability or inflammation of the bladder, and also with some evidence of a lesion, ascertained by an exploring instrument or by bimanual palpation. The exploring instrument may detect enlargements of or projections from the prostate; it may detect, but not definitely determine, the presence of growths from the walls of the bladder, and it may detect the presence of stone or foreign bodies, but minute granulomata, soft papillomata, tubercular ulcers—all of which I have seen in my experience cause free hemorrhage—may entirely elude any instrument guided by the sense of touch. Fortunately, we are now able to bring to our aid another sense. With the cystoscope we are able to see the lesions, and make a differential diagnosis, and are able also to determine whether the blood comes from the bladder, kidney, or kidneys. But cases will occur in which we can get no help from the latter instrument, or in which it may be necessary to supplement the evidence furnished by it. We sometimes have cases of insidious disease of the bladder which give no objective symptoms other than

[1] Read before the Section on Genito-Urinary Surgery of the New York Academy of Medicine, October 13, 1892.

abundant and dangerous hemorrhage. I have had a case of (recurrent) papilloma of the bladder in which there was absolutely no symptom until the occurrence of repeated and prostrating hemorrhages. Furthermore, the hemorrhage was so abundant, and the blood was so rapidly and deeply intermingled with the urine, that the cystoscope gave no aid in the diagnosis. In this case the diagnosis was made, first, by determining the fact with the searcher that a foreign body was present upon the right side of the bladder; secondly, that the exploration of the bladder with the searcher increased the hemorrhage, and thirdly, when the bladder was emptied with the catheter and the last portion of its contents allowed to drain into a separate glass, this was noted to be redder in color and to contain more blood than the other portion of the fluid. The bladder was then washed repeatedly with an antiseptic solution, and at no time did the fluid return from the bladder without being tinged with blood. Each time, as the bladder emptied itself, it seemed to drain blood from the neoplasm directly into the catheter, and the last portion of the fluid was always darker than the first. In this case, the incision into the bladder and the removal of the tumor by the supra-pubic route of course instantly stopped the hemorrhage.

It has been my experience with the cystoscope, which, in spite of its occasional failures, should be regarded as an instrument of precision, to observe that hemorrhage from the kidney is rarely so rapid and abundant as to obscure the fluid medium in the bladder. Hence, if this does take place, in a given case, it may be regarded as one of the diagnostic points in favor of the lesion being in the bladder. But if the case which is presented for diagnosis has no symptom of disease of the bladder other than the hæmaturia, it will not do to assume that therefore the blood comes from the kidney. There can be no question that the latter—one or both of them—may supply an enormous quantity of blood, and sometimes without any particular effect upon the general well-being of the subject. Physiological and pathological facts both demonstrate this, but inasmuch as the question of treatment of the symptom involves the removal of the cause, we should carefully, studiously, and in order examine each of the organs from which the blood may come. Associated symptoms give valuable aid in determining the source of the hemorrhage to be in the kidney, and when obscure, or not present at the time of the examination, must be carefully sought for.

Lumbar pain, associated with blood in the urine, is a frequent accompaniment of lesions of the kidney. It may be only vaguely like the intensely severe colic which accompanies the passage of a renal calculus, but, especially if it be unilateral and minute clots be found in the urine, it is plainly valuable in locating the lesion. Manual exploration may also reveal in the kidney region the presence of a distinct enlargement or of an indefinite fulness, or of mere tenderness, but I will admit that these signs are not always present, and are not easily ascertained. Individuals vary so in the amount of adipose tissue about the kidney that no positive conclusion either way (for or against) can be drawn from the two latter symptoms alone, and it is only as one or both form part of a group that they are valuable. It should be stated here that a movable or floating kidney may be the cause of blood in the urine, and its investigation should not be omitted in a doubtful case. The microscopic examination of the urine which, "it goes without saying," is a matter of course in all genito-urinary cases, gives especially valuable aid in suspected kidney lesions by informing us of the presence of casts, crystalline and granular material, tissue of neoplasms, and epithelium. Important differential evidence is furnished by the "catheterism en deux temps," suggested, I believe, by Guyon, with which I suppose all surgeons are familiar, and to which reference has already been made. The fallacy in it, against which we must carefully guard, is that blood may trickle into the bladder from the ureters, coagulate, and be delivered at the end of the catheterization, stimulating the bleeding from a vesical neoplasm. I have been led to multiply the washings, and to add the device of pressure over each kidney and ureter in turn between the washings. Thus: The catheter is passed, and the last portion of urine gathered in a separate glass. The color and characteristics of this small quantity are noted, and the glass numbered and set aside for microscopic examination. The bladder is then thoroughly washed, emptied, and the last few drops of the fluid separated in another glass. The bladder is again washed, emptied, and the catheter allowed to remain a few moments, while deep, bimanual pressure is made over (for example) the right kidney and along the course of the right ureter. The fluid, which escapes slowly, and often only in drops, is also gathered in a separate glass, and set apart for microscopic examination. The bladder is again washed, and the manœuvre repeated with the left kidney and ureter. If the small amount of fluid which is gathered under these circumstances is tinged with blood, the strong probability is that it comes from the kidney, and subsequent microscopic examination of the fluid may convert this probability into certainty. This procedure may not be unfamiliar to you, but I was led to employ it by observing in two cases of pyelo-nephrosis that, after thoroughly washing the bladder, purulent fluid could be made to spurt from the catheter (*in situ*) by pressure over the diseased kidney. I may add that one of these individuals learned the art of emptying his kidney (so to speak) and gained so in well-being that he positively refused operation. The following somewhat complex case illustrates some of the points, and I beg leave to quote it briefly.

A gentleman, aged forty-six, intermittent attacks of hæmaturia in eight years, lasting a few days at a time. For the past three weeks profuse and persistent hæmorrhage. He noticed that the first gush of urine contained bright red blood, then the stream grew darker, and finally became a deep smoky color. No frequency of urination; no pain associated with the act of urination; no lumbar pain; no lumbar enlargements or tenderness. History of urethritis and subsequent attacks of frequent and painful urination. General condition was depreciating. Confinement to the house, and the taking of ergot, etc., made him complain of feeling wretched. Locomotion did not increase the amount of blood, nor cause pain. The introduction of a soft catheter was attended with some difficulty in the posterior urethra, and as it entered the neck of the bladder he complained greatly of pain, and immediately there was a gush of bright red, clotted blood, followed by very dark-colored smoky urine. I thought at first that I had to deal with a neoplasm at the neck of the bladder, especially as per rectum there was tenderness and a sense of fulness in this region. The washings, as detailed above, were then undertaken, and the drainings of each few moments were always tinged with blood. Microscopic examination of his urine showed free blood, a small amount of pus and epithelium; and of the drainings, free blood and a cast. Treatment of the posterior urethritis, to which the pus could be referred, relieved the pain and difficulty of introducing instruments, and exploration with the cystoscope (more than once) showed a normal bladder and bright red blood exuding from the left ureter. This was evidently in sufficient quantity to coagulate at the base of the bladder and be expelled with the first contraction of the viscus. The presence of a normal bladder, and the absence of signs of abscess, neoplasm (including tuberculosis), or calculus in the kidney or its pelvis, which at the end of eight years ought to be manifesting themselves, led me to consider the cause of this man's hemorrhage as congestion, due possibly to some form of toxæmia. The examination of blood taken from his finger revealed the presence of "plasmodium malariæ" in abundance. All instrumentation was stopped and his hemorrhage ceased abruptly under the administration of tincture of hamamelis, followed by quinine.

Of course, cases might be multiplied which would indicate the difficulties of diagnosis, but these are familiar to you, and it would only be a waste of time to attract your attention to them.

The second part of the question, namely, "What shall we do for blood in the urine?" is so directly connected with the treatment of its cause that we are immediately led to ascertain upon what pathological condition in the genito-urinary tract its presence depends. Here it must be said that in the time allotted it would be impossible to present these in detail, nor would it be practical, for I think our minds may be led to valuable results by considering the subject in a general way. The question involves often the treatment of the symptom as well as the removal of its cause.

The comparatively small amount of blood which escapes with the urine during an attack of gonorrhœal cystitis is, as a symptom, of little consequence, and it is only necessary to say to you that the treatment of the cystitis itself will cure the hæmaturia. But in the old man, with prostatic hypertrophy, who is bleeding profusely into his own bladder, the latter, perhaps, distended with clots and urine and making the most agonizing and violent contractions to expel its contents, the condition is entirely different. Here the shock of the loss of blood is added to by the violence of the suffering, and the question as to what shall be done is an exceedingly delicate one. Sometimes the very act of relieving a retention, and thus putting the bladder at rest, will stop the hemorrhage. Sometimes again, the quieting of the expulsive effort of the bladder by the use of opium (morphia), relieves the congestion (because, as you remember, on account of the anatomical arrangement of the vessels of the bladder, the more the bladder contracts, the more blood is retained in its veins) and stops the hemorrhage, and the clots that have accumulated in the bladder, becoming softened by the urine, are expelled in the form of magmata. My own impression is that in these cases catheterization should be avoided as far as possible, for it is in the knowledge of all surgeons that the introduction of infectious material into bloody foci very readily induces decomposition and sets up inflammation which may be far-reaching in its effects. Hence catheterization should be done under the most scrupulous antiseptic precautions and only when it becomes absolutely imperative to relieve the intense suffering of the patient. The question then arises, when the resort to the catheter is imperative, as to what to do with the clots. In some cases I have looked upon the presence of the clots as conservative; that is to say, the pressure of the clot, plus the contractile efforts of the bladder, has seemed to control the hemorrhage. But where the bladder is not comforted and quieted by the relief of the retention, and the clots are still present, it is evident that the bladder resents their presence, and of course the expulsive efforts of the bladder, by maintaining the congestion, add to the hemorrhage. The removal of the clots, then, in order to quiet the bladder, is in itself a hæmostatic procedure. I must withhold my approval of the injection of pepsine or peptonizing solutions of any kind into the bladder under such circumstances. Such materials easily decompose. They can scarcely be rendered so aseptic as to not run a very great risk of adding to the bloody contents of the bladder septic material. Hence I prefer to break up the clots either by the aid of some instrument, such as the lithotrite, or by careful and frequent ablution with an antiseptic solution to remove them gradually, or to reduce their volume to such an extent that the bladder itself can expel them. Should the hemorrhage continue and not be controlled by dilute astringent injections, one of the drainage operations, preferably by the perineum, may be undertaken.

The hyperæmia (congestion) of the bladder due to the presence of foreign bodies, including calculi, sometimes causes hæmaturia. It may be modified, and the hemorrhage stopped by rest in bed, careful ablution, and, if need be, the injection of dilute astringents (tannin, 2 to 100; zinc sulph., half grain to the ounce) not strong enough to irritate the bladder and cause its contraction, nor to form clots, until such time as in good judgment the foreign body can be removed.

In the case of neoplasms, whether benign or malignant, it seems to me that we can hardly wait—certainly not for any length of time—to counteract the symptom, for as a rule, when the cases present themselves to us, they are suffering largely from the effect of the loss of blood, that is to say, acute anæmia. In my opinion, good judgment requires that we shall proceed to open the bladder by way of the supra-pubic route and remove the neoplasm, if need be with a resection of a portion of the bladder, as speedily as possible.

As to the methods by which foreign bodies, such as calculi, should be removed, I have elsewhere given my opinion, and only refer to them now when they are causes of hæmaturia. When it has been definitely ascertained that the source of the hemorrhage is the kidney, another series of questions are presented to us for solution.

In hæmaturia due to traumatism of the kidney, such as result from falls or blows upon the renal regions, and where the associated symptoms are those of collapse and other evidence of excessive loss of blood in or about the kidney, I would advise unhesitatingly an incision, either lumbar or abdominal, which will give access to the great vessels of the kidney, and ligation of them. Records show the death-rate following traumatism and rupture of the kidney to be very high, and that it is usually due to the loss of blood, and not to the loss of function. It has been demonstrated that the kidney receives a supply of blood, moderate to be sure, from other vessels than the renal artery, sufficient at least to maintain the life of the kidney for a time long enough to enable the other kidney to accommodate itself to the increased demand upon it.

If the history points to the presence of a retained calculus in the kidney, that is to say, recurring lumbar pain, preceded, accompanied, or followed by the hæmaturia, and if the cystoscope locates the source of the hemorrhage, a judicious nephrotomy may be done and extraction of the calculus, if possible. It may be proper to say here that it has occurred to me, from failures of my own and from failures I have observed in the practice of colleagues to find stone in the kidney, that a wider incision through the kidney may be with safety and propriety made than I, at least, have been willing to make. Some investigations by F. Legueu[1] fortify me in this belief.

Hæmaturia due to neoplasms or tuberculosis of the kidney presents a question which I think must be determined by the individual cases. Roberts has shown, and with him accord the French observers, that with carcinoma of the kidney the duration of life is just about as long in the cases which have hæmaturia as in those which have not, and I am led to the conclusion that the hemorrhage alone is not a positive indication for a nephrectomy. The growth of the tumor, pain, the danger of infection to the rest of the body, and the possibility of the prolongation of life, provided always that the other kidney is normal, must lead the surgeon to decide whether nephrectomy should be performed or not. I think the same considerations apply to the individual in whom is developing a tubercular kidney. It is an interesting fact that the autopsy-rooms show that not only have purulent foci in the kidney, but tubercular ones also, been surrounded by a protective capsule, and the individual passed a moderately comfortable and lengthy existence, somewhat handicapped, to be sure, by a more or less degenerated kidney.

31 East Forty-fourth Street.

The Cincinnati Hospital Library contains seven thousand three hundred and sixty-three bound volumes, and receives regularly one hundred and fifty-one medical journals.

[1] Annales des Maladies des Organes Genito-Urinaire, July, 1891.

CONTRIBUTION TO THE TREATMENT OF CLUB-FOOT.[1]

By SIGFRED LEVY, M.D.,

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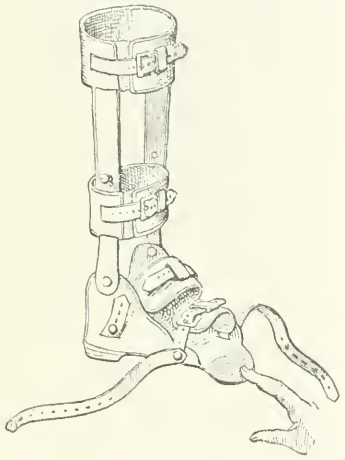
THE manifold methods of treatment—apparatus, bandaging, manipulations, and operative procedures—recommended and used in the treatment of congenital pes varus might, to an outsider, appear as a proof that the treatment of this deformity is still, to a great extent, vague and lacking in the necessary scientific and empirical basis. Those who are constantly engaged in the treatment of deformities, and who are familiar with the nature of the lesion in question, know, however, that this variety of methods is less the expression of uncertainty than of the special difficulties which the treatment of pes varus



has to conquer, and of a number of individual peculiarities in every single case and in every single orthopedist.

It is not only certain that the congenital pes varus can be cured—this especially holding good without any restriction in cases where continuous treatment can be applied before the epiphyseal growth has stopped—but it is also beyond any doubt that this result can only be obtained when methods of treatment founded entirely on experience and deduction are serving us as a common guide, however different the methods or means are which each individual applies in their execution.

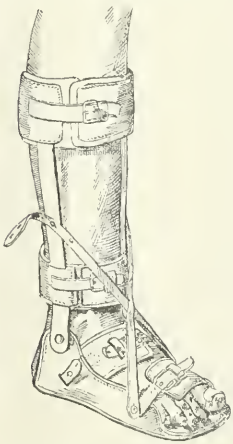
These remarks apply especially to the principle generally accepted nowadays, and adopted in cases which come under treatment directly after birth, the so-called American or Sayre's doctrine, according to which congenital pes varus should be treated as early as possible. Both experience and theory furnish weapons to defend the correctness of this doctrine against that of earlier surgeons, who held another opinion upon this subject.

This also applies to the principles followed in the treatment of pes varus at a more advanced age. In these cases the treatment may consist in forcible reduction by the hand or by one of the many apparatus in use, by "Etappeverbindung," by subcutaneous division, or by "open incision." The rule for the treatment is in all cases the same, viz., that which obtained a broad scientific base in Jul. Wolff's "law of transformation," which might be shortly expressed in the maxim: 1, Bring the osseous parts into their mutual normal position; 2, keep them in this position; and 3, make them act in this position.

Convinced, as I am, of the correctness of this fundamental principle as a guide for our treatment, and acknowledging the importance of the excellent scientific foundation which the "law of transformation" offers orthopedic science and treatment, I am equally sure that it is necessary to choose but those methods of treatment which allow us to follow the above-mentioned threefold injunction, and to reject, or modify, those which prevent its consequential accomplishment.

All methods of treatment must be tested and valued from this point of view. However, but one of these, viz., the immobilization by fixed bandage, which is so extensively used in the treatment of club-foot, will be tested here, mainly as giving an illustration.

A pes varus having been corrected, *i.e.*, the first demand of the above injunction having been complied with, a fixed bandage made of plaster of Paris, or other plastic material, may be of assistance to carry out the second, *i.e.*, keeping the foot in the corrected position. As far as the third demand is concerned, *i.e.*, the performance of the normal function, the fixed bandage, however, fails entirely. It actually impedes the function; it not only keeps the talo crural articulation, but also all the minor joints in front of this, fixed, and simultaneously the whole apparatus acting in the movements of these joints (muscles, ligaments, vessels, nerves etc., and even the nervous centre implied) are kept inactive, not for days and weeks only, but for months, and even for years. If, then, the "transformation" of the deformed osseous parts of the foot not only depends upon normal position, but also upon normal function, the protracted immobilization must be an obstacle to the "transformation" of the club-foot. Besides, or rather consequently, immobilization has an inseparable companion, viz., atrophy, the result being an augmentation of the atrophy which in all cases exists prior to treatment. Accordingly, after the discontinuation of the long-lasting immobilization a protracted and energetic battle has often ineffectually to be fought against this obstacle to normal function. Furthermore, the fixed bandage has an active influence in compressing the tissues it encircles. If we needed proof of the considerable, and often very destructive, consequences of long-lasting compression connected with immobilization, the sad experience obtained by the removal of the so-called "Dauerverband," in cases of minor surgical lesions, supplies ample material; but the examination of the stiff, pasty, thin, atrophic pes varus, which has been retained in a fixed bandage only for four to five weeks (not to mention three months), speaks distinctly enough in that respect.



These considerations lead us to the conclusion that protracted immobilization is a method to be rejected in the treatment of club-foot. I have for a long time, long before the "law of transformation" furnished me with theoretical arguments, abstained from using immobilization for a longer period than eight to ten days, for instance, never longer than until the tenotomy wound was tolerably healed, and I have taught others to act in the same manner. At the same time, I have endeavored to construct a retentive bandage, or splint, which was able to keep the corrected foot in position, without incurring the drawbacks of immobilization, and I think I have succeeded in this in the splint illustrated above.

It will be seen that the apparatus consists of two pieces, the junction of which is situated exactly in the plane of

[1] Read at the Sixth Annual Meeting of the American Orthopedic Association, held in New York, September, 1892.

the talo-crural articulation, and of which the one forms a double splint for the anticrus, while the other is a plate shaped splint with bent rims for the foot. The foot-splint must fit the foot exactly, and must not reach farther than the bases of the toes; it is furnished with two straps, which go through the splint on the edge between the plate and the bent rim. Of the two straps, the posterior acts on the talus region from the external side of the foot, while the anterior exerts a traction on the anterior part of the foot from the internal side of the foot. Besides, two elastic bands are attached at the extreme front of the foot-plate, intended to be fastened to the crural splint after crossing on the foot. In this whole splint we have an apparatus which can act with great force upon the reduced club-foot in all three deviating directions: the posterior traction, which acts upon the talus region counteracts the deviation toward supination; the anterior counteracts the adduction; and the elastic bands the plantar flexion. Besides, this splint does not hinder the natural function; walking (including the disengagement of the foot from the ground) can take place normally. Further, the splint can be removed at pleasure for dressing, manipulation, shampooing, etc.

Of course it is impossible for me to say whether this splint will prove as useful to you, gentlemen, as it has to me. However, I am certain that you will agree with me in saying that "immobilization is incompatible with transformation."

DRAINAGE AFTER PELVIC OPERATIONS AS INFLUENCED BY PRELIMINARY CURETTAGE OF THE UTERUS AND TRENDELENBURG'S POSTURE.

By WILLIAM R. PRYOR, M.D.,

NEW YORK.

It will not be controverted that drainage after intra-peritoneal pelvic operations is most undesirable, though often necessary. The principle of "when in doubt, drain," cannot be accepted as an axiom. It admits of a discretionary power which is unscientific; for doubt as to the propriety of the operative technique must obtain so long as the result of the operation is doubtful. Manifestly, then, any procedure which will render drainage unnecessary will be acceptable. But first, let us consider the disadvantages attendant upon drainage. By drainage I mean the employment of either a drainage-tube, or packing the locality to be drained with absorbent gauze, as suggested by Mikulicz. It may be accepted that all forms of drainage act locally, and not as drains to the general peritoneal sac, inasmuch as that sac is early shut off from the drain, and the field drained by a protecting wall of lymph. This lymph is due to a localized, non-septic peritonitis, unaccompanied by temperature or other constitutional symptoms. In fact, so benign is it in character, though often very extensive, that the function of the parts involved—the intestines—is seldom interfered with.

The disadvantages of drainage are, the discomfort to the patient accompanying the attention given the drain; the protracted convalescence; and the complications which so often follow the use of the drain. In view of the importance of drainage, discomfort to the patient, and even the protracted convalescence would not deter us in its use. But the complications due to drainage are so formidable as to warrant our most careful consideration of the subject.

The lymph thrown out around a drain is never entirely absorbed, but results in the formation of extensive and firm adhesions. A patient with such adhesions and bands is necessarily exposed to intestinal strangulation. Every drained cavity is subject to infection from without. In this way the ligatures employed become foci for suppuration and the formation of sinuses, or around them is cast a mass of lymph which remains permanent. But by far the most serious objection to drainage is the break it produces in the line of union, thus rendering the patient liable to ventral hernia—a condition to be radically cured by another cœliotomy only. And although this possibility is reduced to a minimum by employing my open method of treating the fat and skin layers of the incision, yet the accident does occur very frequently. It may be advanced that drainage is necessary in certain cases, and that the objections to it are insignificant in the light of the utility of the drain. This must, of course, be admitted when drainage is necessary; and it is most desirable to know when to look upon it as such. We must limit the cases which are doubtful.

For many reasons operators drain. Chief among these is the lack of faith in the operative method employed. The possible sources of infection are limited simply by the number of materials and persons employed in the operation. Therefore the simpler the technique the less the risk of infection. Drainage must do one of three things—remove a sepsis introduced by a foul operation, or a septic material present in the subject at the time of the operation, or a sepsis forming subsequent to the operation. For the first, of course, there can be no excuse, except when organs are removed already communicating with a cavity which it is impossible to render aseptic, as the intestinal canal. Any procedures which will limit the necessity for drainage must lessen the number of cases drained; and, as corollary, methods which necessitate drainage are to be avoided. Were it possible to remove diseased organs without evacuating their possibly septic contents, the indications for drainage would be confined to cases in which infection occurs subsequent to the operation, and to cases in which the general peritoneal or even pelvic cavity is already infected.

It might be well to consider the means by which infection may occur *post-operationem*. These are three—lesions to the intestines, which perforate even by minute openings after the operation; openings into a vagina not aseptic; and sepsis following along the lymph-currents from a focus of sepsis to open mouths at the field of operation. Injuries to the intestines are best avoided by operating when the patient is in such condition that there is least risk of such injuries, and by employing a method which enables us to avoid inflicting such lesions even where the risk is greatest. Operations done in attacks of acute peritonitis, associated as this condition is with distended and adherent guts—adherent not by mere bands, but, as it often seems, by very blending of broadly adjacent walls; and operations performed on growths which have old and firm attachments to the intestines, represent the two classes commonly met by the gynecic surgeon where intestinal wounds are at all possible. More or less extensive sloughing of the intestinal walls due to strangulation or ulcerative processes I will not consider. If we can avoid operating in acute peritonitis, manifestly it would be infinitely to the patient's benefit.

We are brought to consider pelvic peritonitis under many varied conditions. It may be offered as a postulate, that women have pelvic peritonitis so often and men so seldom because the former have uteri. So rare, indeed, is pelvic peritonitis in men that it is almost well-nigh a fact that the pelvic peritoneum can become infected through the uterus only. The male is exempt, and its existence in the woman is *prima facie* evidence that it has entered by means of the uterus. Pelvic peritonitis arising in this way has a fatality commensurate only with the size of the uterus and its lymphatics. It is more likely to prove fatal when the lymph streams are of advanced development and activity, and has less danger attached to its presence when these channels are diminutive and with limited function. Fatal pelvic peritonitis due to extension through the tubes must be of extreme rarity, inasmuch as the first and immediate result of such extension is the incurvation of the fimbriæ and their intimate adhesion, thus completely shutting off further tissue extension. The pelvic peritoneum is most fortunately arranged in that a not very extensive outpouring

of lymph will completely shut off from the general peritoneal sac septic processes in the pelvis. This limiting peritonitis is operative chiefly where the inflammation is due to extension from endometrium to endosalpinx to peritoneum, and only to a limited extent where the infection follows the lymphatics. To illustrate practically, rare indeed must be a fatal issue from gonorrhœal endometritis due to septic infection of a uterus not enlarged by pregnancy or neoplasm. Again, very frequently fatal is the peritonitis following removal of submural fibroids and abortion or labor. So then, if an abdominal section be done in this condition of acute peritonitis with a pelvic origin, the operation is performed under conditions which render possible injury to adherent intestines, and with the paths of extension of the causative sepsis still present and active. If this extension had come by the tubes alone, this one source of sepsis would be eliminated by the removal of the offending tubes and proper attention to the stumps. But the anatomy of the uterus demonstrates how unlikely this is when the infection is septic. Drainage to remove a continuing sepsis is indicated, unless, as I say, all sources of infection can be removed at the time of operation. Openings into a septic vagina may be made purposely when the vagina has not been properly disinfected, and accidentally. The indication seems to be that we properly disinfect the vagina previous to all laparotomies for pelvic lesions. Should such openings be made into a septic vagina or into the bowel, and at the same time such injury be done to the pelvic peritoneum as to render it agreeable to infection, closure of the rent and drainage are indicated.

In view of the rare fatality of acute pelvic peritonitis, unless occurring after labor or abortion or some condition in which the uterine development simulates either state, the question of the propriety of immediate operation arises. I do not believe such procedure can be other than rarely indicated, and therefore the question of drainage will but rarely occur in such cases, and our treatment must be directed solely to limiting the pelvic inflammation.

Peritonitis with a pelvic origin, when fatal, follows either rupture of pelvic abscess, labor, abortion, or unclean operations on the uterus. That peritonitis which follows labor or abortion is best treated by attacking the known source of infection, the inside of the uterus. Immediate operation (cœliotomy) for the relief of a pelvic peritonitis, which it is feared may become general and fatal, must be limited to cases of sudden rupture of pelvic abscess or infection of the clot of an extra-uterine gestation (hæmatocele). And if the infection here is of such extent that by operation all foci cannot be removed, drainage is indicated and unavoidable.

Pelvic peritonitis may remotely cause a number of lesions which will require operative procedures, and again it may be associated with gross changes in the adnexa which will necessitate their removal. In doing such pelvic operations there may be no sepsis introduced by the operator, and no escape of the septic contents of the diseased tissues removed. And at the same time large, raw, oozing surfaces may be developed by the separation of the diseased organs, notably in pyosalpinx and other inflammatory growths. It is just such cases which give rise to a doubt as to the propriety of drainage. The manner in which these adhesions take place as a result of peritonitis is worthy of note. To have such a condition occur requires two factors—the effusion of lymph and immobility of the organs. The surfaces covered by recent lymph first cohere, then the united lymph plates become highly organized and partially absorbed, producing a union which, on superficial inspection, appears as a continuity of tissue. But it is doubtful if the original peritoneal surface of the adherent organs is entirely destroyed, for by delicate manipulation they may be separated. Such separated tissues appear raw and oozing, but it is a prominent fact that they rarely present bleeding points of considerable size other than open venous channels. We may then look upon such bleeding as coming from surfaces not essentially raw, as we understand the term, but as proceeding from a new tissue which is organized, perhaps, but which is purely adventitious. If this be the true interpretation of these oozing surfaces, the blood produced by them should be considered, as it is blood escaping into the pleura or from a ruptured mesenteric vessel, or a broken vein in the pampiniform plexus; all of which provided such blood cannot become infected *post operationem*.

I have yet to know of anyone advocating opening a case of ruptured extra-uterine pregnancy, except to limit the amount of bleeding, to prevent threatened death from hemorrhage. Why is it that we look upon these raw surfaces as especially unfortunate occurrences and as requiring drainage? Surely the blood they produce is not different from that of the rest of the body—it cannot be particularly noxious. If by the operation no sepsis has been introduced from without, wherein lies the necessity for drainage? Experience has taught that it is better to drain such cases when the lesions are extensive; and frequently there is removed a large quantity of sero-sanguinolent fluid, an evidence in the operator's eyes of the propriety of his procedure. Although a perfectly aseptic operation may be done, these cases undrained will often die. The explanation of this, I think, may be found in the existence of enlarged lymphatics which extend from these raw surfaces to a septic focus in the uterus. These surfaces produce lymph; they produce blood. This lymph should be as innocuous as that thrown out around a drain. And it would be so were it not for the vessels producing it being in communication with a septic cavity. If this third source of sepsis can be removed there will remain no necessity for drainage. Acting accordingly, it has been my practice for some time, as a matter of routine, to always remove the endometrium as completely as I can some days before I perform a proposed cœlotomy, whenever I have the least idea that the endometrium is the seat of septic change. This I have done for additional reasons, but the one bearing on drainage alone interests us. Take for illustration a case of pyosalpinx, associated with acute peritonitis and a purulent uterine discharge. What conceivable objection can there be to thoroughly curetting the septic uterus, irrigating it, and packing with gauze? As a matter of fact, if done in an exacerbation of the pelvic inflammation it will generally cut it short. Does not this one fact show most clearly the etiological relationship between the septic endometrium and the acute process in the peritoneum? And by this preliminary curetting we remove the septic focus in the uterus upon which depends much of the necessity for drainage after the laparotomy, and to which I am convinced many failures in the operations are due.

And now as to the influence of Trendelenburg's posture in operations upon these pelvic inflammatory growths. It seems to me that the chief beauty of the posture lies in our ability to see what we are doing. But with it less ether is necessary, and bleeding from pelvic abrasions is reduced to a minimum. After the adherent intestines are liberated the general peritoneal sac is entirely shut off from the field of work by the diaphragm of flat sponge which is introduced. This also at once protects the bowel from our manipulations and from our antiseptic solutions; from all bruising and all irritants. In the removal of suppurative foci, should pus escape, it is readily seen and caught. Bleeding points are at once detected. Injuries to the intestines can scarcely occur if even ordinary care be exercised in separating them. If the uterine cavity has been rendered aseptic by the preliminary curetting and packing as I have suggested, if no sepsis be introduced from without by the operator, even large raw surfaces may be left undrained and without risk. In other words, so perfect can our method be made that infection must be autogeneal and occur after operation. It has been my practice to pack tightly against all raw surfaces a wad of iodoform gauze, twenty per cent., to be removed just before tying the last sutures. To operate after this pre-

liminary curetting, and in this manner, is to do a clean operation in a clean field. Above all things we do a dry aseptic operation. Drainage, then, must be limited to cases which are already septic, and to cases where we are not sure of our asepsis. The operator no longer need feel doubt as to the propriety of drainage unless he look with suspicion on his method. So far the arguments against this preliminary preparation of the septic uterus have been those based on fear and suppositious risks. And as to Trendelenburg's posture, not one objection has been offered which is tenable. But if the posture enables us to see as well as feel; if it renders flushing unnecessary; if by using it we are enabled to invade the pelvis only; if associated with the preliminary curetting of the uterus it renders possible an aseptic dry operation without subsequent drainage, can the advocacy of a horizontal posture, the short incision, the blind manipulation and bruising of the viscera, the irrigation of the peritoneal sac and the drainage-tube obtain? The one method exposes the acme of all our grand new surgery, the other the science of the rule of thumb. By the one is found a true aseptic clot for raw surfaces; by the other, the drainage tube and its complications.

15 Park Avenue

CLINICAL OBSERVATIONS ON TWO RECENT CASES OF CHOLERA ASIATICA.[1]

By J. HENRY FRUITNIGHT, M.D.,

NEW YORK.

It was my fortune to meet with the first and second cases of Asiatic cholera which appeared within the corporate limits of the city of New York during the recent visitation of that pestilence to our shores. Preliminary to a brief but concise clinical narration of these cases, I desire to say that never before had I seen a case of the disease, and what knowledge I possessed concerning it was obtained entirely from reading and from conversations with members of the profession who had had personal experience in previous epidemics.

For more than fifteen years have I been the medical attendant of this family among whose members the disease manifested itself. In this period of time they have had no more sickness than might befall any family. The family consisted of father, mother, and four adult children, three sons and one daughter. The father and sons always worked steadily, while the daughter assisted the mother in her household duties, as the latter did not enjoy rugged health. The father and mother emigrated to this country from North Germany more than twenty years ago. They have always borne a reputation for sobriety, industry, cleanliness, and thrift. The appearance of their apartments gave decided and unequivocal evidence of these traits of character. The house, No. 768 Eleventh Avenue, in which they have lived during the last eight years, is in a very good condition as regards cleanliness and sanitary arrangement. It is occupied by three families besides themselves, one family to a floor. The house, in fact, is far superior to most others of its class. The neighborhood in which it is located is not a particularly filthy one, and it is not at all overcrowded, for on the opposite side of the avenue are the large open grounds of the Stryker and Mott estates, unoccupied by buildings and extending from West Fifty-second to West Fifty-fourth Streets, and from the Eleventh Avenue to the banks of the Hudson River.

The family went out visiting very rarely, and had but little communication with the world about them. They had not come in contact, so far as they knew, with any person or object that had been exposed to the infection. They had not in years visited any person who had arrived from Europe, nor had they received visits from anyone who had recently come ashore. They even had not received any European mail for years. As a result of a rigid investigation in every direction, no history of exposure to the infection could be discovered. Yet I have a theory how the infection occurred, of which I will speak later in this paper.

William W——, tripe-butcher, aged fifty-two years, was first taken ill on Friday, September 2d. On the following day, W—— accompanied by his wife, went out of the city to pay a visit to relatives living at a little place called Athenia, near Paterson, N. J. At this time, Mr. W—— was suffering from a mild diarrhœa. While there he at first improved. But overindulgence in unripe fruit, with copious draughts of very cold well-water, caused a reappearance of his diarrhœa. Therefore on Tuesday, September 6th, the couple returned to their home in New York City. Early in the afternoon, Mr. W—— applied at a drug store in his neighborhood for an ordinary diarrhœa remedy, which was given him. This he immediately vomited. He had not vomited before this. At eight o'clock in the evening I was summoned, which was the first time that the patient was seen by a physician, although the symptoms had first appeared on the preceding Friday. The symptoms which the patient presented were similar to those which we find in aggravated cases of cholera morbus. As already intimated, no history of known exposure to the infection of Asiatic cholera could be discovered, and although the symptoms were violent they were not more so than I have frequently seen in cases of cholera morbus in years past. Furthermore, though the case was viewed with suspicion, the symptoms were not violent enough, nor was the appearance of the patient such as to suggest the existence of Asiatic cholera.

Sulphate of morphia combined with acetate of lead was given to check the diarrhœa, and subcarbonate of bismuth to control the vomiting. His diet was restricted and regulated in the usual manner. Cracked ice with whiskey was also ordered, and sinapisms to the abdomen. I saw the patient on the following day, and found him so well that I left word that I should not call again unless I was sent for. On this day, the eighth day of September, the patient was seen, however, by Dr. F. de Kraft, of this city, his lodge doctor, who had also visited him on the two preceding days. Dr. de Kraft also diagnosticated the case as one of grave cholera morbus. On the next day, the ninth inst., I was again called in the morning, as the patient had a return of all his symptoms. Still the symptoms were not at all typical of Asiatic cholera, and it was thought that the patient was suffering from a relapse. The same general treatment was followed as in the original attack, but unsuccessfully. I visited the patient at eight o'clock in the evening of this day, and found him in a very critical condition. Even at this time the appearances were not what one would expect to see in cases of Asiatic cholera. Pain he had very little, no cramps whatever in extremities, collapse not rapid nor striking, surface temperature not much depressed, conscious always. At six o'clock in the forenoon of Saturday, September 10th, the patient died. Upon the basis of the foregoing history a certificate was granted assigning "aggravated cholera morbus" as the cause of death. In the light of subsequent events this diagnosis was revised, and that of Asiatic cholera promulgated.

On Saturday evening, September 10th, in the morning of which day Mr. W—— had died, I was again hastily summoned to see Mrs. W——. I reached the house at eight o'clock. On entering the lower hall of the house I met Mrs. W——, who said to me: "Why, I am not sick; the boys are only frightened." Since six o'clock in the evening, just twelve hours after the death of her husband, the patient, who was sixty-three years old, had had a couple of large watery stools, but had not vomited, nor did she complain of pain. I prescribed five drops of Squibb's compound solution of opium, to be taken every three hours. At midnight I was again called, but Dr. Charles E. Young responded in my absence and directed a continuance of the treatment. At seven o'clock in the

[1] Read before the Northwestern Medical and Surgical Society of New York, October 19, 1892.

morning of Sunday, September 11th, I again visited the patient, when I found that she had had a number of large serous discharges during the night, but that now the diarrhœa had ceased. Incessant vomiting, however, had set in, she also complained of pain in bowels and cramps in legs, and the appearance of her features was a startlingly realistic revelation of what could only be exhibited in a collapse due to Asiatic cholera. The sudden onset of the symptoms, following so closely the death of her husband, their rapid termination in collapse, together with the fact that the plague threatened to invade the city, induced me to seek counsel. At half-past nine o'clock in the morning our colleagues, Dr. J. Lewis Smith, who passed through the last epidemic in this city, and Dr. Frank Grauer, and Dr. Charles E. Young, met with me at the bedside of Mrs. W——. At this time we found the patient in a very grave condition, although the vomiting was less frequent and the stools very small, as she was in a collapse. The skin was dusky in hue, the face was drawn, the eyes sunken, the nose pinched, and the lips compressed. The radial pulse was nearly imperceptible. The whole surface of the body was icy-cold and bathed in a clammy perspiration, while the thermometer registered 102° F. in the rectum. She was very restless and moaned incessantly, and since seven o'clock complained of abdominal pain and of cramps in the calves of her legs and in her arms. Her speech was incoherent, and decubitus was with thighs flexed on abdomen and legs flexed on thighs. It was the opinion of all the physicians present that the only factor lacking to justify the diagnosis of Asiatic cholera was the absence of the history of exposure to the infection, and that therefore, to determine positively the nature of the attacks, it would be necessary to make cultures demonstrating the presence of the spirillum of Asiatic cholera.

It is just here, in the first cases of the disease, that the diagnosis would naturally be surrounded with difficulties, and particularly so if no direct exposure could be traced, as in these cases. For on the one hand, if the diagnosis should have been announced without a positive foundation, the physician would be denounced as an alarmist and panic-monger. If, on the other hand, he failed to make the proper diagnosis, and it subsequently proved to be a genuine case of the disease, he would be accursed the land over for permitting the disease to gain a foothold. After it has been definitely determined that cases of the disease have appeared in the city, it will be comparatively easy to make a diagnosis from the symptoms alone. Therefore it was very necessary to be exceedingly cautious in announcing a diagnosis of Asiatic cholera, until every test known to us had been applied.

When a clear and exact history of exposure is lacking, although the symptoms may be just like those present in typical cases of Asiatic cholera, it will be impossible to make a differential diagnosis between Asiatic cholera and aggravated cholera morbus without a bacteriological examination. Nevertheless, from the clinical symptoms which Mrs. W—— exhibited, we favored the diagnosis of Asiatic cholera rather than that of cholera morbus. Our reasons were these: The rapidity of the development of the symptoms, the rapidity of the appearance of collapse, viz., within six hours after the appearance of the first symptoms, the external coldness and the internal rise of temperature, the parchment-like feel of the skin, which had lost all its elasticity and remained stretched when it was pinched up, the persistent vomiting, the large serous, odorless discharges from the bowels, though they did not present the characteristic rice water appearance, and the quickly fatal result, scarcely twenty four hours after the beginning of the illness.

It was decided to notify the Health Board of the case, which was done at 10.15 A.M. In the meantime, Dr. Grauer and myself awaited the arrival of the health official at the house of the patient. Within forty-five minutes after the despatch of the information the health inspector, Dr. Dillingham, reached the house, which is an evidence of the celerity which the Health Board displayed in the discharge of its duties in the presence of the dreaded plague. Dr. Dillingham carefully examined the patient, and coincided in the views expressed by the consultants earlier in the morning. Specimens of excreta were obtained from Mrs. W—— before death, and were taken away to the bacteriological laboratory of the Health Department for the cultivation of the bacilli. In due time the Board of Health issued its bulletin announcing that the comma bacillus of Koch had been found in the discharges, thus verifying our clinical diagnosis of Asiatic cholera. Demonstrations of these bacilli obtained in the W—— case have been made at recent meetings of several other medical societies of this city.

For obvious reasons, none of the discharges of Mr. W—— were obtainable at the time, and though some of the intestinal fluids were obtained from his cadaver, they were not available for bacteriological examination, inasmuch as the body had been embalmed.

When the symptoms of collapse had set in, champagne, sulphate of spartein, and camphor were administered to Mrs. W——, while the body was surrounded with flasks of hot water and liberally covered with sinapisms. Large enemata of normal salt solution were thrown into the rectum every half-hour, with a view toward establishing reaction. For a few minutes after each enema there would appear an exhilaration of the circulation, the pulse would come up, and a slight flushing of the face would be noticeable, and the expression of the eye would become more lively. The diet had been restricted, and consisted mainly of peptonized milk, bovinine, and egg albumin, with boiled water given in small and frequently repeated quantities. At five o'clock in the evening I again saw the patient, at which time she was in extremis, and she expired an hour later.

In this connection it is proper to state that, from the very first visit to Mrs. W——, stringent orders were given by me for the whole family to observe in regard to the subject of personal and local disinfection and prophylaxis. Solutions of carbolic acid and of corrosive sublimate were provided for washing of hands, utensils, and textile fabrics. Boiled water and thoroughly cooked foods were ordered. So thoroughly was this carried out that when Dr. Dillingham asked for any linen which might have been soiled by either patient, not a shred could be found thus soiled, and that no other member of the family, all of whom came in close contact with the patients, did not contract the disease, corroborates how thoroughly our prophylactic measures were applied.

The case of Mrs. W—— was a severely classical one of Asiatic cholera, typical in all its features, and in its entirety the converse of the case of the husband. Therefore, reasoning *a posteriori*, we concluded that Mr. W—— must also have suffered from an attack of Asiatic cholera, notwithstanding that his case lacked a typical appearance. Had the chronological order of these cases been reversed, the diagnosis of Asiatic cholera would undoubtedly have been made in the case of Mr. W—— without hesitation.

In reviewing the husband's case, I think that we may safely consider his earliest symptoms as due to an ordinary diarrhœal attack, and that the symptoms caused by the Asiatic cholera first appeared on September 9th, seven days after his visit to New Jersey. In the case of his wife the first symptoms occurred on September 10th, eight days after the visit to New Jersey. The incubation period is, I believe, from five to ten days. Both patients were in all probability exposed simultaneously to the source of infection, therefore. Near the little place in New Jersey which the W——s visited is situated Dundee, a town of many factories. This place receives its quota from every emigrant ship which arrives at these shores. Is it not possible that before the disease was detected, or even officially declared as existing, at Hamburg, and before quarantine was enforced in our harbor against arrivals from that port, the germs entered our gates and found their way to Dundee? And does it not in conse-

quence seem very plausible that the W——s, in some unaccountable manner, received the infection into their systems in their trip to Athenia? for the time which had elapsed between their visit to that place and the appearance of their choleraic symptoms just about equalled the time embraced in the period of incubation.

INTERRUPTED AND CONVERSION METHOD OF TREATING MALARIA;

OR, THE CONVERSION OF THE REMITTENT AND CONTINUED TYPES OF MALARIAL FEVERS INTO THE INTERMITTENT, BY INTERRUPTION.

By HENRY V. GRAY, M.D.,

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WHETHER a separate poison is imbibed by the system to create these distinct types of fever, is not before us just now for argument, but every physician or person at all familiar with malaria and its antics, is aware of the fact, that in some sections we have distinct agues, ending in fever and sweat, and in other sections there is an apparent immunity from agues, but an adaptability to the remittent and continued types. Any departure from a pure air is liable to create disease in those who are very susceptible, if that air is respired sufficiently long; but to create that which we pronounce the various algid types, there must be some peculiar or specific poison pervading the air. Certainly, we all fully recognize and appreciate this, when we examine the eruptive diseases. Indeed, every disease is a disease unto itself, with its peculiarities and operating causes, as much so as the various types of mankind; and it is only by a commingling of the poisons, and antagonisms, that an interruption can take place.

A typically pure air, Dr. Joseph F. Edwards tells us, is as follows: "Seventy-nine per cent. nitrogen gas, twenty-one per cent. oxygen gas, watery vapor, and ammonia." This, he says, "is ideal atmospheric air."

It strikes us, that if our chemical and scientific knowledge has placed us so far upon the road of hygeia, and her miracles, we are fast approaching a point where we can evolve a something which, while not yet tangible, may sooner or later be named and weighed by the scales of an exact science. If we know positively what a pure, living air is, we certainly will be, in the course of time, able to state its variableness, together with the special adulterants. Professor Flint, of New York, in his "Practice of Medicine," says: "The causation of intermittent fever involves a special morbific agent, commonly known as malaria." We will suppose, also, that this distinguished scientist refers remittent and continued fevers, when existing in malarial regions, likewise to special morbific agencies, either as a unit originating several types, or each type with its own special poison or micro organism.

While it is true that all persons living in a malarious climate are to a certain degree familiar with this "bad air," or miasm—which are synonymous with malaria—we know as little about the agencies at work in causing the fevers and cachectic states of this disease as the names representing it imply. We call it swamp fever, hæmorrhagia, and hæmaturia, and claim that some peculiar miasm comes up from the marshes, enters our system, undergoes a zymosis or fermentation, ending in chills (ague), fever, and sweat, and taking on both a continued and periodic form.

The ague or chill type, ending in fever and sweat, is the explosive form. The remittent and continued is the passive or non-explosive.

Who would not prefer to live in a section of country peculiar to the regular chill or explosive type to one in which the malaria enters the system to harass and annoy, making sallow and muddy your complexion, running you down, ending in regular continued fever or a melancholic, cachectic constitution?

My argument is, then, that we have two kinds of swamp fungus, or malarial poison. In the explosive or chill form we can feel assured we will have a good shake, fever, and sweat. Nature is at her best here in breaking up this poison. When a sufficient charge is introduced an explosion follows, and all the organs are violently excited and agitated. Reaction follows, and then come the fever and sweat. Great quantities of the poison are eliminated through it. A calomel purge and a few doses of quinine, given at the proper time, destroys this monster.

In the other type (the passive) there is a slow, insidious, deceptive "lying in wait." A large percentage of the members of a family feel badly under this influence, and are under the doctor's care most of the time. When they first come into the section they may be in blooming health. Wait, and they will find there is some unseen poison at work.

In the fall of 1886, the few physicians living at Roanoke, Va., had their hands full of malarial fever patients. Among the number I had two patients very ill with malarial fever. I treated them in the usual manner, one being very much benefited, but the other in the fifth week decidedly worse. I used from ten to twenty-five grains of quinine with each patient daily. My patients were Charles and William L——, the latter of whom was gradually getting worse.

Early one morning I was called up, and found him very ill—temperature, 107½° F.; pulse, 150. There was a whistling, rapid respiration; skin parched and arid; entire suppression of urine. I concluded to interrupt and advance this case. I threw the cover off, the window being open, until the patient was chilly. In the meantime I was getting hot water sufficient to fill a large new tub. I put the young man in this water, covering him up with blankets, only leaving his eyes and nose exposed. He remained in this tub of hot water fully half an hour, but his body and head were supported, and hot water was added from time to time. He broke into a tremendous perspiration. I ordered a drink of whiskey and digitalis, and, as he was about to faint, had him taken up and put to bed, wrapped in the blankets, with an extra dry one. He remained in these blankets until everything was sweat. Meanwhile I had his body rubbed at different points with hot, dry towels. I then commenced quinine again, giving him fifteen-grain doses every two hours for three doses. At 4 P.M. that day his fever left him, and I am glad to say he never had any recurrence.

Charles E——, cashier of the Roanoke Savings Bank, and brother of Mayor William O. E——, was taken sick this same fall, starting in with high fever, but no chill, which portended malarial fever. I pursued the same course with him, breaking up his fever. Both of these gentlemen have had good health ever since.

I will say in conclusion, that in the case of William L—— I did not use the quinine until the suppression of urine was overcome, having free diuresis and the skin in full perspiration. Had I used quinine before these emunctories were freely aroused, I would have killed my patient. I have made it a rule ever since, when cases are obstinate, to use the interrupted and conversion method.

Those living in that section where the second form of poison prevails should try the interrupted and advanced method. To interrupt and advance, you convert the second (passive or non-explosive) type into the first by reducing rapidly the temperature and chilling the body; then, by using the hot bath, you bring on a sweat. You must exercise judgment, of course, and be ready with stimulants and other supporting measures. Then is the time to make quick but useful use of quinine.

N. B.—You can chill and make your patient shiver by a few cold blasts from a hand bellows, or chill by placing your patient between ice sheets for a few moments, and then quickly putting him in a hot bath. Be careful in using coal-tar products, if at all.

The Next International Congress of Anthropology will be held in Constantinople, or, should events render that city undesirable as a place of meeting, in Athens.

TWO CASES OF NEURITIS.

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Two cases of neuritis exhibiting widely different characteristics, illustrating to some extent the remarkable range of manifestations seen in this disease, recently came under my observation. The first case is noteworthy on account of the very unusual causation. The second is a case of multiple neuritis of an extraordinarily severe type, which somewhat resembled acute ascending paralysis (Landry's paralysis) in its symptoms, and presented some difficulties in diagnosis. The second case further illustrates in part the course of multiple neuritis and other interesting features.

CASE I.[1] *Patient Struck by Lightning; Current Entered through Right Hand and Passed down same Side of the Body; A Distinct Mark Left on the Hand; Loss of Motion and Sensation in Right Hand which Grows Less as the Arm is Ascended.*—Miss T——, a young lady aged about twenty-five, a telegraph operator, while at work in her office during a thunder-storm, received a severe shock of electricity, the current entering her body through her right hand, which was at the key-board at the time the building in which she was working was struck by lightning. She was at once greatly prostrated by the shock, being, for a short time, rendered unconscious. Several other persons in the room, at the time the building was "struck," experienced slight shocks. All were seized with fear and consternation. A subsequent examination of the telegraph instrument showed that it was "burned out."

Miss T—— was at once taken to her home, where she was attended by her family physician, Dr. Nowry, who discovered a bluish-red streak of ecchymosis under the skin of the fingers and on the flexor surface of the arm. There was almost complete paralysis of the arm, the loss of motion being greatest in the hand, less in the fore-arm, and least in the upper-arm. The patient was considerably agitated mentally by the scare, and possibly by the current also.

When I saw her, a few days after the mishap, I found her condition as follows: There was general lassitude and weakness, as shown by her appearance. She had barely enough force in the fingers of the right hand to cause them to touch the palm. Motion at wrist very feeble. There was a little more power in muscles of fore-arm, and considerably more in those of the shoulder. There was anæsthesia and analgesia in the hand and arm, which, in a general way, without going into tiresome details, about corresponded to the motor impairment, *i.e.*, it was greatest in the hand and gradually grew less as the shoulder was approached. The patient complained of feeling "numb" and "queer" over the entire right side of the body. It seemed to her as though this modified sensation was exactly limited to the right side of the body, from head to foot, by a longitudinal line going through the middle of her body. There was some, but not a great deal of, loss of power in her right leg. The mark of ecchymosis on the arm noted by Dr. Nowry was, at this time, scarcely visible.

Remarks.—The electric current which prostrated the patient doubtless entered at her fingers, which were at the keyboard, and passing up the right arm and down the right side of body, made its exit at the foot. Skin, muscles, fasciæ, vessels, viscera, and nerves were penetrated by it. But the effects left behind were specially noticeable in the nervous system, particularly in the nerve-trunks. Moreover, the most profound effect upon the nerves was noticed at the point at which the current entered the body. This can be accounted for chiefly by two facts: 1. The great density of the current at the point of entrance. 2. The lessened power of resistance to disease of nerves remote from the cord. It is well known that the pain and destruction caused by a given electric current is directly proportionate to the size of the electrode. If, in the case of this patient, the same number of ampères of current had entered her hand through an electrode five times as large as the one with which it was brought in contact, the pain and molecular disturbance would have been only one-fifth as great. The study of peripheral neuritis seems to show that the power of resistance to disease of nerves lessens progressively as they proceed from the cord, the peripheral terminations being most liable to the influence of disease. Hence, the longer the nerve-trunk, the greater is the vulnerability of its peripheral endings.

I have called this case one of neuritis, although it is not an uncomplicated one, for other tissues besides the nerves of the arm and leg were involved. Besides, there were psychical symptoms and general prostration caused by the shock of the current and by fright. Under a tonic and sedative treatment, together with rest, the patient made a complete recovery. For obvious reasons, electricity has been omitted from the treatment.

CASE II.[1] *Paralysis Beginning in Right Wrist (First Symptom); Progresses Rapidly; Other Three Extremities Involved Simultaneously; Complete Loss of Power in all Four Limbs at End of Forty-eight Hours; Some Pain and Tenderness; No Loss of Control of Sphincter; Progressive Stage of Disease Lasts Six Weeks, after which Slow Recovery Begins; Tenderness along Nerve-trunks; Great Wasting of Muscles; Suspected Causes: Copper and Influence of Cold.*—F. A——, male; Swede; aged thirty-four; height, five feet eleven inches; weight, one hundred and eighty pounds. Has been in the United States two and a half years; wife and five healthy children living. Eight brothers and sisters living and healthy. Drinks very moderately; never gets drunk. Denies specific history. He has enjoyed excellent health up to time of present illness. For some months has worked as common laborer about the salt works at Natrona. But for five weeks immediately preceding the onset of the disease from which he is suffering, he has acted as furnaceman in the copper-smelting furnace of the works.

Without any premonitory symptoms, the patient (March, 1892), felt a weakness in right wrist which rapidly increased. Some few hours (ten or fifteen) later, motion in the other arm and in both legs became impaired simultaneously. This paresis in all four limbs increased with such great rapidity that at the end of forty-eight hours from the inception of the disease there was complete loss of motion in both arms and legs. Along with the paralysis, there was tenderness of the skin and muscles in the parts involved, which was specially noticeable when an attempt was made to move the patient in bed. This pain and tenderness was complained of a good deal up to the third week of the disease, since which time it has not been a prominent symptom. For the first ten days or two weeks of the disease, the patient exhibited a temperature of $99\frac{1}{2}^{\circ}$ to 100° F. At no time has there been incontinence of urine or fæces, or pain along, or radiating from, the spine. A few days after the onset of the disease, a flabbiness of the muscles of arms and legs became noticeable. Very soon after this, atrophy of the paralyzed muscles began and rapidly progressed for about five weeks.

I saw the man with Dr. Lincoln, four weeks after the onset of the disease. His condition at that time was briefly as follows: Almost complete paralysis in arms and legs. By a great effort, the patient can slightly flex fingers of left hand. Flabbiness of all the muscles of legs and arms. Marked atrophy of both deltoids. Considerable (but less) wasting of biceps, triceps, pectorals, and scapular muscles in both arms. Less marked, but

[1] I saw this case, and am permitted to report it through the courtesy of Dr. S. E. Nowry, of Wilmerding, Pa.

[1] This case was seen in consultation with Dr. Mark Lincoln, of Natrona, to whom I am indebted for notes on the case as well as permission to publish it.

perceptible, flabbiness and wasting of muscles of fore arms and of both legs and thighs. Upon handling there was considerable tenderness in the paralyzed parts. Moderate pressure along any of the large nerve-trunks in the arms or legs caused distinct pain. Deep pressure caused acute pain. No loss of sensation to touch, pain, heat, or cold. Muscular sense intact. No bed-sores or tendencies thereto. Pupils normal; react to light and accommodation. Patient cheerful. No mental symptoms.

Through a letter from Dr. Lincoln, dated June 27th (about two months after I saw the patient), I learn that the progressive stage of the disease lasted, in all, about six weeks; that the patient is able to slightly flex and extend hands and wrists; that functions of bowels and bladder continue unimpaired, and that patient is gaining a little in flesh. No special change so far as atrophy or tenderness is concerned. He seldom complains of pain. No response to galvanic, but a slight response to faradic current in the paralyzed parts. He can feel the current.[1]

By way of treatment, the patient is getting a pill containing iron, arsenic, and strychnine three times a day, and a daily application of the faradic battery. In the earlier stages of the disease potassium iodide and saline purges were administered, with a view of combatting any metallic and syphilitic poisons which might be in the system.

Remarks.—The question of the differential diagnosis between acute ascending paralysis (Landry's paralysis) and multiple neuritis naturally presented itself.

In view of the fact that acute ascending paralysis, although first described by Landry so long ago as 1859, is, as yet, not well known or studied (largely on account of the infrequency of its occurrence), it may not be amiss, in this connection, to give an outline of its symptoms. The disease is sudden in its onset. There first appears a weakness in the legs, which rapidly increases. Power of standing is lost in a few hours or days; with it there is muscular relaxation of paralyzed parts. Muscles of pelvis and abdomen next become involved in a similar manner; then the arms; finally, the muscles of diaphragm, and those involved in respiration, deglutition, and phonation. The paralysis ascends the bodily frame as a whole. There is tingling but no loss of sensation. Some flabbiness but no wasting of muscles. No change in muscles as regards electrical contractility. Sphincters intact. No bed-sores. No mental change. Slight elevation of temperature. Spleen enlarged. The disease may run its course in three or four weeks. It is apt to terminate fatally by involvement of the muscles of respiration.

The symptoms common to the two diseases are: very rapidly increasing paralysis; muscular relaxation without loss of control of sphincters or loss of sensation, and without high fever. In both, complete paralysis of the limbs is seen. Both run a rapid course.

But the case under consideration can be diagnosed as one of multiple neuritis, as distinguished from Landry's paralysis, from the fact that the paralysis did not involve the legs first, as is almost always the case in Landry's paralysis; that the paralysis did not progress beyond or involve any muscles besides those of the arms and legs; that there was marked change in the reaction of the paralyzed muscles to electricity; that there was marked muscular wasting (which is never seen in Landry's paralysis); and finally, that the patient has not succumbed to the attack.

In more severe cases of multiple neuritis, where the cord becomes involved, the differential diagnosis, according to Gowers, may be difficult or impossible. But from a consideration of the points mentioned, the diagnosis in this case ought to be tolerably clear. The differential diagnosis from spinal hemorrhage,[2] myelitis, and other spinal diseases will suggest itself, and needs scarcely be mentioned in this connection. I will only remark that entire absence of pains along, and radiating from, the spine, with the control of bladder and bowels unimpaired, would preclude a spinal origin in any case in which there was (as in this case) complete paralysis of both arms and legs.

Next to, or perhaps exceeding in interest, the problem which presents itself in connection with the diagnosis is the one relative to the etiology. In considering this question, one point stands out prominently, *i.e.*, the fact that for five weeks immediately preceding his illness, the man, who had all along been employed as a common laborer, worked in a copper-smelting furnace, employment to which he was unaccustomed. Is the illness occurring so soon after he engaged in his new employment only a coincidence? Or is copper poisoning at the bottom of the whole trouble? A careful search failed to discover a green line along the gums; nor did examination reveal any other direct evidence of copper-poisoning. Moreover, Gowers declares that metallic poisoning is an unlikely cause when the arms and legs are affected simultaneously.[1] Metallic poisonings affect the arms first. Gowers further declares that "an initial affection of the proximal parts of the limbs at the same time as the distal parts, suggests some other cause than alcohol, especially cold or toxæmia."[2]

From a careful examination of the man's habits, it does not seem that the causation can be attributed to alcohol. At his work, the man was subject to drafts and sudden changes of temperature. Dr. Lincoln suggests that the influence of cold under these conditions might be enough to account for the trouble; and he also suspects syphilis. In reference to the copper-smelting furnace, it may be said that other men have worked in it for years without suffering any illness. Yet I cannot help suspecting that the man has been poisoned by copper. Perhaps copper-poisoning and the influence of cold air together are responsible for the trouble.

Westinghouse Building, November 1st.

[1] Improvement has continued up to date—November 1st. Patient now walks and uses his arms fairly well.

[2] For account of symptoms of this disease, as illustrated by a typical case, see paper by the author in New York Medical Record, June 6, 1891.

[1] Gowers: Diseases of the Nervous System, vol. i., p. 143 (Edition, 1892).

[2] Loc. cit.

Clinical Department.

CASE OF CHANCRE OF RIGHT UPPER LID.

By HENRY W. RING, A.M., M.D.,

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Miss Annie D——, aged seventeen, waitress, consulted me at my office, September 21, 1891. There was a small ulcer on the right upper lid, involving the tissues about the punctum of the upper canaliculus, and the skin and conjunctiva of the lid to the extent of about four millimetres. Patient stated that this sore was of three or four months' duration, at first seemed like a stye which would "gather and break occasionally," was painless, and annoying chiefly from the excessive secretions and epiphora. Of late the ulcerating surface was extending somewhat and the symptoms more troublesome. She looked well, and considered her general health good. Inquiry could elicit no specific history or source of contagion.

Touched ulcer with alum pencil, cleaned and sprayed with bichloride of mercury solution, prescribed boric acid wash and vaseline, and requested that she report in a week. She appeared in two weeks. The treatment had been valueless and the sore was about one-third larger. The edges were soft and easily broken down, and there was pultaceous secretion. The pre-auricular glands were now moderately swollen, and she admitted that she had had swollen cervical glands before.

Being convinced that this was a case of ulcerating chancre, now prescribed Squibb's twenty per cent. oleate of mercury, to be rubbed into the skin daily, and saturated solution of iodide of potassium, beginning with fifteen-drop doses three times daily, and increasing three

drops each day. Locally, to continue careful cleansing and vaseline.

Was next seen October 14th, one week later. The ulcerating surface was still more extensive, considerable redness and swelling of lid, the sub-maxillary, as well as pre-auricular glands were swollen, there were mucous patches on lower lip, one on right tonsil, and sore throat. Ordered chlorate of potash gargle, and slight increase in the amount of mercurial ointment used daily.

On October 21st the improved condition of the lid was very marked. The œdema and congestion had largely disappeared, and the ulcerating surface was half healed, as well as the patches on the mucous membrane of lips and tonsils. Throat no longer sore. She was now taking forty drops of the saturated solution of iodide of potassium.

My next note of the case is November 20th. Had increased to one hundred and twenty drops of K. I. Lid completely healed and seemed normal in appearance, mouth and throat healthy. As teeth were getting tender, ceased treatment for a period of three weeks.

Do not think she was seen again until March 5, 1892, when she consulted me on account of the irritation caused by one or two short eyelashes which had become turned in where there had been a slight loss of tissue. They were pulled out. She was again taking K. I. and mercury and was told to continue for a year, stopping at intervals when unpleasant symptoms arose.

When this case was first seen the negative history, small size of the sore, and apparent absence of an indurated base rendered a diagnosis uncertain, but after the second visit there was the usual excavated ulcer with a comparatively hard base, mucous patches in the mouth, and adenitis of the pre-auricular and submaxillary glands, and doubt as to the character of the sore no longer existed.

The cure by the antisyphilitic treatment seems to have been complete.

46 Elm Street, New Haven, Conn.

THE FALSETTO VOICE.

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Every voice, whether male or female, may be divided into registers, which, for convenience and simplicity have been designated: 1, The lower chest register, so named because the singer feels as though the voice came from the lower chest; 2, the upper chest register, coming from a little higher, and 3, the throat register, or the falsetto voice, which apparently comes from the throat. These three divisions or registers constitute the extent of the male voice. In the female voice, however, we have a fourth division, known as the second falsetto and, occasionally, a fifth, known as the head register. Each of these divisions can be differentiated from each other by the quality and volume of the individual tones within it.

As you all know, the voice of man should undergo a marked change at puberty. The puerile voice of the second register should become the masculine voice of the first, or lower register. Although the intensity may remain the same, the pitch should be much lower. This change is usually gradual, but in some it may take place quite suddenly.

In a few the voice remains unaltered or becomes higher, reaching the third, or falsetto register, although the boy may have become a man in every other respect. This condition frequently cures itself, some months or years after puberty. The patient in some as yet untried muscular effort finds that the voice of a man comes from the lower part of his chest, and thereafter the muscles controlling that register, which have heretofore been misused, respond to future demands and thus the cure is complete. Occasionally, however, this peculiarity may persist until somewhat later in life, when the patient's condition is made a very humiliating one, not only on account of the attention which he attracts at business and when at social gatherings, but also for the reason that the general public believe that there must be some lack of development in the genital apparatus of a full-grown man with a falsetto voice. It is needless for me to say that the public are entirely wrong in regard to their suppositions.

The difficulty is undoubtedly due to an improper use of the muscles of phonation. The patients speak with the abdomen retracted, which not only restrains but makes tense nearly all the muscles of the chest and neck. It is believed by Mulhall and Glasgow [1] to be due to a spasmodic affection of the arytenoid muscles, but to me it seems more like a voluntary effort which began at puberty and was continued from habit.

It is claimed by some, but denied by others, that it may be due to various diseases of the upper air-passages, or to a continual use of the voice in this register. I cannot comprehend how any pathological condition in these parts may cause this peculiarity, or how its removal will effect a cure. However, Cohen [1] has alluded to a case where it followed an acute laryngitis developed at the sea-shore, and Lincoln [1] to that of a bright young college student, who after taking the female part in a number of private theatricals was unable to get rid of it. An examination in the latter case revealed a large hypertrophy of the pharyngeal tonsil, and a removal of this enabled him to acquire a lower register.

This patient, before you, Mr. W. C. L——, a piano teacher, twenty-one years of age, and of American parentage, was referred to me for instruction by my former teacher, Dr. E. Fletcher Ingals. When he first consulted me, about a month ago, his speech was in quite a high falsetto key. He had never yet carried on conversation in any other register. He had at times been able to pronounce monosyllables in a lower voice, but had been warned by practitioners to discontinue it, for fear of doing injury to the vocal apparatus. He had come to look upon the falsetto voice as his normal one. The pronunciation of a few syllables in the lower register seemed to tire out his voice completely. It became higher instead of lower at puberty.

On examining the larynx, a month ago, there was evidence of marked congestion, the cords being quite pink, due undoubtedly to the over-strain of the voice. The nasal cavities, pharynx, and naso-pharynx were normal. There is very little congestion of the larynx at present, and I have no doubt it will entirely disappear in a short time. As he sings in the high register, you can see that the cords, both true and false, close more closely than they should. The glottis is reduced to a mere slit. The cords appear very narrow and tense, and the thin sharp edge alone seems to vibrate. Now as he sings in the lower register the vocal chink is much larger and has the shape of an ellipse. The whole width and length of the cords, and, in fact, the walls of the larynx also, appear to participate in the vibratory movements, but they vibrate more slowly than before.

The cure of this condition consists in convincing the patient that the high voice is not the normal one, and proving to him, in any way you wish, that he can converse and sing in the lower register.

When this patient first consulted me, after a prolonged laryngoscopic examination I told him, with an air of authority, that there was no trouble with the larynx whatever, and that the fault was purely a physiological one. I then depressed the chin of the patient, directed him to throw the shoulders back and to distend the abdomen. This was done, so that a large column of air might strike the cords in an unrestrained position. I then uttered several low gutturals and asked him to imitate me, which he did at once. Here I called his attention to the fact that he could speak in the lower register, and, should he desire a cure, he must continue to do so. A conversation

[1] Transactions of the American Laryngological Association, 1888.

then followed, both continuing to talk in the lower register, in which the patient's confidence in himself and in me was established, and the cure was almost accomplished.

It was very difficult for him to understand why speech in the higher register was more normal to him, as he could converse in that register with comparative ease, while the pronunciation of simply a few words in the lower register tired him very much. I told him this was due to the fact that he had used the higher one for seven or eight years, and that if he would follow out my advice, within a short time he would not only be able to converse in the lower one with comparative ease, but would then find it much more difficult to speak in a higher register. These statements were made in a manner meant to carry conviction.

It is necessary for the patient to notice each muscular effort for the first three or four days, or conversation will be resumed in the former high key. For this reason it would be well for him to remain away from business and acquaintances, unless it should be one friend who could correct him should he at any time resume his falsetto voice.

I had the patient read aloud ten minutes, two or three times a day, always assuming the position which I directed him to take at the first sitting. This time can be gradually increased, until speech in this key will seem quite natural to him. It has been just a month since I saw the patient first, and he now speaks in the lower register with considerable ease. He also informs me that it is with some difficulty that he resumes his former voice.

He complained of a dry, raw feeling in his throat for the first few days, but this was very much relieved by the application of cold packs to his neck.

In closing, then, remember, that the error is purely a physiological one, consisting in the faulty use of the voice. To cure it, it is simply necessary to convince the patient that the lower and not the higher register is the normal one, and demonstrate to him, in any way you wish, that, if he so desires, he can always use that register.

705 Venetian Building.

MALIGNANT CELLULITIS; OR, PHLEGMONOUS ERYSIPELAS.

By GEORGE T. WELCH, M.D.,

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While ordinary erysipelas is an exudative inflammation of the skin, that which is known as phlegmonous erysipelas may begin in a wound, or from injury to the cellular tissue, by a blow or otherwise, without the skin being broken at all. In this case a true malignant cellulitis is rapidly developed, with intense burning pains, high temperature, delirium, a face dusky and anxious, tongue thick and coated, appetite gone, urine scanty. The skin does not always indicate the mischief existing beneath it; indeed, the enormous thickening of the limb or affected part is the earliest indication of the spread of the disease —the erythematous condition of the skin not appearing at the limit of the cellulitis until later on, when it may then spread beyond it. In a comparatively short time there may be entire necrosis of the whole adipose tissue of an arm or leg, if the progress of the disease is not actively interrupted by the knife and free drainage. The skin does not die so quickly as the tissue beneath it, but it is shortly blotched with gangrene, and entire sloughing of all the structure down to the frightfully vivid muscular system, and even beyond, is likely to result.

Hippocrates, in his account of the epidemics, begins one of his free-hand sketches with "The year was southerly, rainy; no winds throughout. Droughts had prevailed the previous seasons. The autumn gloomy and cloudy, with copious rains. Winter southerly, damp and soft. Early in spring, along with the prevailing cold, there were many cases of erysipelas" And crowded into a train of evils went fevers, diphtheria, ophthalmia, anthrax, and dysenteries, but the erysipelas grew constantly worse and worse. "In many cases," says he, "the erysipelas, from accident, sometimes from a very small wound, broke out all over the body Great inflammation took place. Abscesses ended in suppurations, and there was great sloughing of the flesh, tendons, and bones; and the defluxion, which seated in the part was not like pus, but a sort of putrefaction, and the running was large and of serious characters. In many cases both forearm and arm dropped off, and in some cases the whole femur and bones of the leg and foot were laid bare."

Epidemical erysipelas has occurred several times, in different parts of the world, during the present century, but perhaps nowhere else but in Hippocrates can be read so malignant a march of the phlegmonous variety. Sutton, describing the Indiana epidemic of 1843, says that "in one-twelfth of the cases diffuse inflammation affected the connective tissue in the axilla, or below the pectoral muscles, sometimes extending under the great muscles of the back and over the entire trunk, or the limbs, dissecting out the muscles, and often terminating in gangrene, with a discharge of long shreds of dead connective tissue resembling wet tow."

To one who sees for the first time a well developed case of phlegmonous erysipelas, the effect is startling, not to say horrifying. I have given an account in the "Transactions of the New Jersey State Medical Society for 1885," of a remarkable case that I attended in April, 1883. The patient, a sailor, had been ill for several days, and the local practitioner had, under a mistaken diagnosis, directed his treatment to the relief of inflammatory rheumatism. He was a man of spare habit, his left arm measuring eleven inches, while the affected right arm had a circumference of sixteen inches, and was boggy to the touch from shoulder to wrist, while gangrenous blotches appeared here and there, and a thin ichor exuding from the furthest inflamed and bloated lip of the disease, from which arose a noisome smell, gave the hideous impression that the limb had been swallowed to the shoulder by some venomous reptile. The countenance of the man was wild and haggard, and his temperature was 104° F. Free incisions were made and probably a pint of sanious pus rapidly escaped, affording some temporary relief, but in the end all the skin and connective tissues sloughed quite away, leaving the arm, from within one inch of the shoulder-joint to within three inches of the wrist, a bare, revolting, suppurating mass of flesh, on the surface of which veins and small arteries arose in bold relief. When a proper granulating surface appeared, on April 26th, I began the process of skin grafting, assisted at times by Dr. D. E. Roberts, and after about three hundred skin-grafts had been applied at various intervals, I had the satisfaction, in November, of discharging him with a soundly cured and useful arm. The satisfaction was altogether that of a duty well done, for I have never received the *quid pro quo* which gracefully closes an important transaction.

A man always pays dearly for his knowledge, however, and I have no reason to regret the price of mine. In reviewing the history of this case I formulated the resolve never to hesitate to treat even with heroic incisions in its early stages any similar disease that might come under my care. Incisions, drainage, and the thorough washing out of the sinuses with antiseptic fluids may not be the only treatment necessary, but they are by far the most important factors. The grave constitutional symptoms may be kept in abeyance by these means alone, and with generous diet, while the treatment by tonics, stimulants, and alteratives are only adjuvants. Two recently occurring cases in my practice confirm me in this opinion.

On April 24th last I examined a carbuncular swelling on the chin of Mrs. L. E. C——, which had begun as a small red spot and had rapidly become hard, raised with a minute vesicle, painful, and had a strangely angry appearance. Suspecting malignant pustule, I urged the part should be incised and cauterized at once, but the patient shrank from this method and parleyed for time. I had

therefore to content myself with poultices well mixed with listerine, which was at hand, and with opiates for the severe pain. On calling the next morning I found the patient anxious to undergo the operation, her pain having resisted anodynes and the chin in the few hours past having increased to an enormous size. Pointed lines of inflammation had curved-like flames about the lips, and up into the cheeks, and as days went by, features that had once been delicate and agreeable, became exaggerated and monstrous beyond description. The lips swollen to bursting, except for their tense leathery texture, became thrust outward and extended directly forward for nearly three inches, while the little glands hidden ordinarily and unnoticed in the mucous membrane, were now so many pouting mouths emitting pus and shreds of tissue; the nose became purple and broad; the eyes far apart and closed by puffy lids, from which hung rheum; abscesses developed in the loose connective tissue under the evelids, the tongue was swollen and foully coated, and the glands under the jaws brawny, while with deglutition nearly impossible, and pain vibrating like red-hot wires, the woman was generally able to control her intellect and to signify her consent to any and all the operations necessary to effect her cure.

The knife was used thirty-two times altogether, some of the incisions, as in the upper part of the face and about the nose, being carried to the bone; the upper lip was cut through in two places under the nostrils, and these incisions, together with the openings from the glands, most of which were large enough to admit a No. 5 probe, gave sixty-three avenues of exit for the purulent discharges. These had to be cleansed twice daily, and syringed out with antiseptic fluids. Often the mouth had to be sprayed with from one to two pints of a warm solution of corrosive sublimate before it could be freed of the ropy slime which encumbered it, and the patient be able to swallow medicines or food. Liquid food or liquid medicines could not be swallowed, but by thrusting semi-solid food, or boluses, partly into the throat the muscles of deglutition would rustily respond. Peptonized foods were used by the rectum at times, but the patient preferred per orem for all the pain it caused.

The temperature ran as high as $104\frac{2}{10}°$ F., and as low during recovery as 97° F. The heart's action was frequently hurried and the breathing quick and shallow, while copious perspirations weakened the system at times. Hypodermics of morphia and atropia were often necessary, and sometimes in large amounts, to control the pain. Arterial stimulants, antiseptics, tonics, concentrated foods, were freely administered. But the numerous incisions, made necessary to preserve the future integrity of the features, gave such advent to the septic material that there was no extensive sloughing, except from the upper lip and the chin, and a renewal of structure here, together with massage faithfully employed, has removed nearly all deformity, so that the patient has already recovered her former appearance in great degree, the scars have mostly disappeared, and in a year it will be difficult to demonstrate that this lady has passed through such an appalling crisis. I was happy in having the faithful attendance and assistance, through many trying days, of Dr. Myers, of Orange County, N. Y., the brother of the patient.

A still more recent case, and one of phlegmonous erysipelas, occurred in the left hand and arm of A. Z——, after the thumb had been bruised during the hilarities of a clambake, on September 11th. The skin was not broken, but by the 13th the thumb had increased to double its usual size, with well marked cellular inflammation. I anæsthetized the patient and laid the thumb well open, down to both phalangeal bones. Some fetid discharge occurred, and the wounds were dressed antiseptically. On the following day the inflammation had proceeded up the wrist and an opening was made there. Deep cellular inflammation proceeded, however, the forearm increasing daily in size, with intense pain and delirium. As soon as a boggy condition occurred, with the assistance of Dr. R. A. Terhune, I made sixteen deep incisions, a large amount of sanious pus and dark blood escaping. In three days I found it necessary to open each finger and various parts of the hand, and to increase the size of the opening at the wrist. By stroking the arm firmly and with deep pressure, toward the wrist, about one pint of pus escaped, and a stream of antiseptic water could be forced through the sinuses from an opening at the flexure of the elbow until it ran out at the base of the thumb. The fluid was then injected through the opening in the little finger, and escaped at various points. This method was carried out twice daily, at times, until all the sinuses healed and the skin regained its integrity. There was not a large amount of tissue-sloughing, and no deformity beyond stiffness of the fingers and hand is to be observed to day. The temperature was high in this case, with delirium at times, copious sweating for a week, increased heart-action, and a respiration of thirty-six per minute for four days.

I found strychnia, hypodermically used, in amounts of $\frac{1}{60}$ gr. would far better control the excessive heart action and hurried respiration than any other measure. It is not my intention, however, to speak of the medicinal treatment of these cases, for the proper remedies will suggest themselves to every competent physician when the critical time arrives, but to enforce the lesson that in malignant cellulitis a number of small incisions must be made at an early stage of the disease to relieve tension, and the patient should be anæsthetized so that the procedure may be conducted with care and precision, but when the presence of pus is suspected, or tissue disintegration, free openings should be made down to the muscles, or even to the bones, as the case may demand, and copious streams of warm antiseptic fluid should be frequently used, with antiseptic dressings between times.

DYSENTERY AND PTYALISM.

Dr. E. Dreifus, of New Orleans, writes: "Human nature is very perverse, but to show that this very perverseness may be utilized for a man's cure after all other means have failed the writer cites the following case:

"A patient named G——, by occupation a drayman, had been suffering for over a year with dysentery, in spite of all known remedies, which would control the disease for a time only, as he would disobey my instructions and pay no regard to the rules of diet set down for him.

"I had become almost disheartened when the thought struck me that if I could control his diet I could cure him; accordingly on my next visit I ordered him to take fifteen grains of calomel and told him to drink as much iced lemonade and eat as many pickles as he pleased. The next morning I was hurriedly summoned and found him suffering from a beautiful attack of ptyalism, in consequence of which he was unable to eat anything but fluid and bland food for three weeks. His dysentery got well."

URINE OF HIGH SPECIFIC GRAVITY.

Dr. E. E. Mather, of Williamstown, Mass., writes that he was recently consulted by a lady who wished to be bled. She complained of dizziness and an indescribable feeling in the head. She was forty-six years of age, married and the mother of a family, and regular in her monthly periods. Examination of the urine gave the following result: Quantity passed in twenty-four hours, 20 ounces; reaction, acid; no albumin; urea, 290 grains; sugar, the merest trace; specific gravity, 1.111. Dr. Mather had no urinometer that would measure this specific gravity, but it was kindly determined for him by Professor Mears, of the chair of chemistry in Williams College, by means of the Westphal balance. The patient gradually recovered her wonted health and spirits.

Progress of Medical Science.

Tuberculosis of the Eye.—In the *Gaceta Medica Catalana*, February, 1892, Julio Altabas reports a case occurring in a lad, aged seventeen, who, after eruptions, alopecia, and other manifestations of syphilis, complained of uncertain vision. There existed no photophobia, blepharospasm, hyperæmia, or lachrymation. There was some slight diffuse opacity of the cornea and a few small nodules on the left iris. In a side light the opacity was found to be formed by white dots on the posterior surface of the cornea, these being adherent exudations upon Descemet's membrane, the outgrowths of serous inflammation in the ciliary region. The pupil had normal reaction to light and responded to atropine. In the left iris there were small yellowish-white nodules, but slightly transparent. On the outer edge there were eight miliary granulations and others on the internal side. Toward the lower border of the iris there were also granulations. All were without vessels and pigment. With the ophthalmoscope, behind the crystalline lens and the anterior layers of the vitreous body various filamentary exudations were discovered, arising in the ciliary region and causing confusion of images upon the retina. Vision and the visual field were restricted. There was no pain, the general condition good, and examination of visceral organs negative. A diagnosis was made of tubercular irido-cyclitis in the left eye and tubercular cyclitis in the right.

Tuberculosis of the Iris.—In *Médecine Moderne*, May 19, 1892, Müller states that tubercular conditions of the iris are rare. In the case reported by him, characteristic yellowish tubercles were found on the inferior border of the iris. The patient presented hereditary manifestations of tendency to tuberculosis. The author thinks the eye had been infected by the hand, the tubercular bacilli travelling along the lymphatics and remaining in the lower border of the iris because of their own weight, which prevented them from rising higher.

Pityriasis Versicolor.—In the *Arch. de Méd.*, October, 1891, Molènes and Costilhes give a view of the pathogenesis and treatment of pityriasis versicolor. The disease is certainly contagious, though not to the same extent as favus. Certain writers consider that pityriasis is a sort of secondary symptom, occurring in persons having digestive troubles. In the greater number of the cases observed by the authors of the paper there were present digestive troubles and seborrhœa as well. The first indication is to destroy the microsporon by means either of tincture of iodine, resorcin lotions, or oleate of copper. The second is to tone up the digestive tract with drugs, of which purgatives and naphthol constitute the proper basis.

Digitalis in Kidney Disease.—Huchard has recently advanced the idea that digitalis, even in large doses, is not hurtful in affections of the kidney. On the contrary, it is useful, even in parenchymatous nephritis, for it diminishes the amount of albumin. Large doses at intervals of two or three weeks give good results.

Surgical Operations and Old Age.—In the *Arch. gén. de Méd.*, July, 1892, Blum affirms that old age is not necessarily a barrier to surgical operations, thanks to modern methods and intelligence. But certain precautions must be taken, such as preparing the patient for the ordeal, choosing the right moment when every function is normal, etc. As far as possible, general anæsthesia is to be avoided. Cocaine or chloroform to the point of drowsiness often serves admirably for the aged, who are not particularly sensitive to pain. Warm cloths should envelop every part of the body that is exposed, except the direct area of the operation. The room should be very warm. Esmarck's bandage should not be used; never in atheromatous conditions. Scrupulous antisepsis, to hasten union by first intention, should be the rule, in order to get the patient out of bed as soon as possible. The aged should be carefully and frequently fed.

Vitality of the Typhoid Bacillus.—Experiments reported by Karlinski, *Zdrowie*, Varsovie, 1891, demonstrate that—1. The typhoid bacillus lives only three months when buried in the earth. 2. That the typical bacillus mixed with excrement does not live as long as the bacillus in pure cultures, owing to the action of microbes native to excreta. 3. Water added to earth diminishes the vitality of microbes. 4. Just beneath the surface, the typical bacillus resists more energetically the action of other microbes than at a greater depth. 5. On the surface of the ground, owing to the influence of sunshine and rain, the bacillus' vitality is lessened. 6. During the putrefaction of organs from typhoid fever cadavers, there is great elevation of temperature, the typhoid bacillus being found for more than three months.

Hepatic Sclerosis and the Hepatic Cell.—Grandmaison, in his *Thèse de Paris*, 1892, states that, as regards distribution, hepatic connective tissue hyperplasia is quite exceptionally systemic, and therefore the inflammatory development of connective tissue is not exclusively the result of vascular irritation. In acute and chronic hepatic lesions sclerosis develops more extensively around the cells than around blood-vessels. Cellular changes are profound in proportion to proliferation of connective tissue, and are the chief factor in the pathogenesis of hepatic sclerosis. Atrophy of the hepatic cell leaves a void that is quickly filled up by cicatricial connective tissue.

Nasal Asthma Alternating with Circumscribed Œdema of the Skin.—Rethi, of Vienna, in *Archives internac. de Rhinolgia*, April, 1892, reviews the different theories of asthma, and admits that in the majority of cases of nasal asthma it is a question of nasal nervous reflex. The case cited occurred in a girl, twenty-two years old, subject to attacks of asthma, in which the nose became stopped up, the nostrils regaining their usual freedom as the attack wore off. With some hesitation, cauterization of the mucous membrane was suggested. For a certain time every night after this procedure there would be a rather extensive œdema of the skin, or an asthmatic attack alternating regularly until the nasal stenosis was completely overcome, when both morbid manifestations disappeared permanently.

Tachycardia.—Lacerna (*Thèse de Paris*, 1892) considers essential and symptomatic tachycardia that may be of organic or nervous origin. In the latter case the condition is either direct or reflex. Direct tachycardia is due to paralysis of the inhibitory system (nervous centres, pneumogastric), that gives symptoms similar to section of the pneumogastric nerve and is of grave prognosis. Reflex tachycardia, due to irritability of the sympathetic, presents a hopeful outlook. It has but little effect upon the heart proper beyond some slight dilatation, and induces no permanently marked disturbance of the general circulation. It is seldom accompanied by pulmonary, laryngeal, and gastric phenomena. Accompanying symptoms are distinctly vaso-motor, as coldness of extremities, pallor or flushing of the skin, and dilatation of the pupil.

Early Symptoms of Neurotic Asthma.—Before the Congress of Balneology, at Berlin, in March, 1892, Goldschmidt made a contribution to the study of neurotic asthma that usually appears about the time of puberty or even later. Though rare in babies and young children, it does occur at a very early age in subjects showing many other morbid symptoms. Little children who are asthmatic are nervous, timid, irritable, very sensitive to cold. There is hyperæsthesia of the skin and consequent eczema. One symptom shows itself early in future asthmatics, and that is impossibility of deep breathing without coughing. The essential treatment is judicious hydrotherapy, combined with indicated internal remedies. Compressed air combats anæmia, relieves the swelling of the bronchial mucous membrane, but frequency and duration of attacks are influenced by it.

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THE SERUM TREATMENT FOR PNEUMONIA.

AMONG the first practical applications of the experimental investigations regarding immunity were those of the Klemperer brothers. They had first found in the cultures of pneumococci a toxine which produced pneumonia in rabbits; later they discovered that rabbits which had been inoculated with the serum of animals and men convalescent from pneumonia, were invulnerable to injections of the pneumotoxine. Applying these results to men, they injected subcutaneously the serum of persons who had just recovered from pneumonia in six cases of ordinary pneumonia. In all these cases the crisis appeared within twelve hours, though there was some return of fever later. The patients all recovered. Neisser reports three cases, in all of which recovery took place, though the specific effect of the serum injections was not so clearly demonstrated. Redner has reported twenty cases treated by the injections. In all there was a favorable result, but in a good many this could not be attributed to the treatment alone. Other cases have been treated by C. Janson.

The first to apply this method of treatment in America, so far as we know, were Drs. W. E. Hughes and W. S. Carter, of Philadelphia, who report one case in the *Therapeutic Gazette*, and give a summary of previous experiments, upon which we have drawn. Drs. Hughes and Carter report the history of their case with commendable care in detail. The patient was a male, thirty-five years old, a hard drinker, who after a two weeks' spree developed a chill with cough and intercostal pain. Three days later he was found to have a temperature of 104° F., with consolidation of the right lower lobe and the beginning of a similar involvement of the left lower lobe. On the fourth day of the disease he received an intravenous injection of three hundred cubic centimetres of defibrinated blood taken from a negro convalescent of pneumonia. The injection was followed by a chill and purging; the temperature, which was 101.8° F. before the transfusion, was 101.6° F. after it. Next day it rose to 104.4° F., and subsequently oscillated between 103° or 104° F. and was normal for three days, when the lungs seemed pretty clear, the temperature was normal, and convalescence began. The authors attribute some specific effect to the injection, because the lungs began to clear up at once despite the fever. We think it very doubtful if the case would be received as one contributing much to one's confidence in serum therapeutics. However, the patient recovered despite his alcoholic pneumonia, and that is a good deal. Drs. Hughes and Carter advise against the use of defibrinated blood, and think that serum collected from a blister, or by letting drawn blood stand, is safer and more efficient. At least fifty cubic centimetres of serum should be used, and it should be injected beneath the skin rather than thrown into the veins.

THE JUDGE AND THE DOCTOR.

A MOST extraordinary decision has recently been given by Judge Levy, of California, in the case of Dr. C. Ellinwood, who had a claim of $30,000 for medical services rendered to the family of a deceased millionaire. The executors of the estate and the three heirs all allowed the bill, but the Judge thought it too much, and cut it down to $10,000! The Judge says in his opinion: "Although inexperienced in the charges of medical gentlemen for professional services, I am at a loss to recall a case where such an amount has been charged. I am of the opinion that the services rendered for one year's time were not of the value of $30,000, but a fair, reasonable, and just compensation would be $10,000, for which amount this claim is allowed."

Yet lawyers often charge a much larger fee for services of much less intrinsic value. We hope that Judge Levy may be taken pleasantly and chronically ill, and then that Dr. Ellinwood may be called to attend him.

THE EYES OF CALIFORNIA STUDENTS.

IN a paper published in the *Pacific Medical Journal* for October, 1892, Dr. W. F. Southhard reports the results of the examination of the eyes of three hundred and eleven students in the University of California. The work was intended to supplement the other physical examinations of the students, and observations made abundantly prove the value of such kind of work. The students examined were Freshmen, ranging in age from sixteen to twenty-seven, the great majority being between the years of seventeen and twenty-one. There were 62 females and 249 males. It was found that among the males 65.64 per cent., or two-thirds, had defective eyes, although 68.67 per cent. had vision of $\frac{20}{20}$. About one-third (36.94) of the total examined were hyperopic; 4.81 per cent. were myopic, and one-fourth (24.49 per cent.) were astigmatic. Among the 62 female students the proportion and distribution of defects were very nearly the same as in the males.

Comparing these results with those of an Eastern college (Amherst), the statistics of Derby show myopia 35.47 per cent., and hypermetropia about fifteen per cent. Statistics of Eastern pupils show, on the whole, an average of about twenty-five per cent. of myopes among persons of eighteen to twenty years of age. In German schools the myopia runs up to forty and fifty per cent. Tschering's statistics of Danish university students gave only 3.8 per cent. hypermetropia, and 32.3 per cent. of myopes. Statistics regarding hypermetropia have not much value for comparative use; but it is interesting to note the fact that on the Western edge of civilization myopia is at a minimum, while hyperopia is quite prevalent, the

conditions being very nearly the reverse of those in such a country as Denmark.

There have been a great many examinations of the eyes of school children and college students; but our social conditions and educational methods are constantly changing, and there is every reason why such studies should be carefully and continuously pursued. The eye is an organ that responds rather quickly to its change in environment, and is in many respects a delicate test of the soundness of methods of physical and mental training. It is extremely necessary, however, that oculists agree more completely as to what should be classed among refractive errors in making up statistics, and as to the technique to be pursued in making the examinations.

TOXIC NEUROPATHIES.

A German physician, Oppenheim, has recently called attention to the effect of the direct and indirect actions of poisons upon the nervous system. Their direct action is to produce typical disorders, as paralysis, due to lead, alcohol, arsenic, or the diphtheritic virus. An indirect effect of toxic substances is the circulatory disturbances they produce, as arteritis and arterio-sclerosis. These conditions obtain in syphilis, alcohol, and lead-poisoning. Functional diseases, as hysteria, neurasthenia, and epilepsy, may also owe their origin to various intoxications. But of the general cachexia that poisons induce, it is quite possible for nervous affections to arise. And their influence does not end here, for irritants like the foregoing exercise distinct action upon the course of intercurrent disease. Traumatic peripheral paralysis and radial paralysis have marked affinity for alcoholic subjects. Alcoholism and plumbism constitute in themselves a definite predisposition to the development of the professional palsies. They aggravate every known form of nervous disease. Hence it will be perceived that there is not only the neurotic taint as a factor in disorders of the nervous system, but a toxicopathic taint as well.

ETIOLOGY OF CHRONIC HEART DISEASE.

In *Médecine Moderne*, July 21, 1892, there is an abstract of Schott's paper on chronic heart troubles and their causes, based upon the study of seven hundred and fifty cases, divided for convenience into two classes, endo-cardiac affections and neuro-muscular disorders. Heredity is an important factor. Among the endo-cardiac affections acute rheumatism plays the most important part; but other infections, as scarlatina, typhoid fever, influenza, measles, puerperal fever, can also produce valvular troubles. Arterio-sclerosis, syphilis, diabetes, icterus, and exophthalmic goitre, are sometimes causes. In neuro-muscular disorders emotion and mental overwork, combined with sudden or prolonged physical fatigue, are the chief causes. Fevers act unfavorably upon the neuro-muscular mechanism of the heart. This is as much the fault of specific poisons in the blood as of high temperature. Chlorosis and anæmia often produce heart disturbances; here care should be taken not to confound effect and cause. Alcohol, tobacco, coffee, tea, and too substantial diet have a like effect. Exaggerated thinness at puberty is also unfavorable to the heart. Constitutional conditions favoring endo-muscular disorders are lithæmia, syphilis, and arterio-sclerosis. Everything that impedes circulation of the blood, as emphysema, pleuritic and pericardiac exudates, mediastinal tumors, predisposes to chronic cardiopathies. Nervous disease, functional or organic, is a powerful factor in the development of cardiac difficulties. And Oertel's cure is also a cause. There may be many others, but Schott confines himself solely to those personally known to him.

PSORIASIS.

In the *Annales de Médecine*, 1891, Dr. Georges Thibierge publishes some interesting observations upon the subject of psoriasis, one of the most common diseases of the skin, though less frequent in Austria and America than in France and England. It is a chronic inflammatory infection, characterized by dry, red, primarily roundish patches, covered with imbricated, silvery, adherent scales, occurring chiefly on the extensor surfaces. Bazin recognized several different kinds of psoriasis, among them the arthritic, herpetic, and syphilitic; but English authors incline to the opinion that there is but one psoriasis. The scales resemble thin drops from a wax or tallow candle, easily pulverized, and may be bent like gold-beater's skin. Pricking off the scales exposes to view a number of bright red dots which bleed easily, and are the apices of the hyperæmic papillæ. The disease may be general, but it is more often upon the trunk, on the back, and especially on the chest. It attacks two regions by preference, the level of the throat and the knee, yet it may appear almost anywhere. The two abnormities most resembling psoriasis are seborrhœal eczema and late manifestations of syphilis. Anatomical changes consist in thickening of the horny layer of the skin, increased development of the rete layers, except over the papillæ, and deep down, a disappearance of eléidine. In the upper part of the corium there is cell exudation and dilated vessels.

Psoriasis is not congenital, though it appears in babies, in patches about the elbows and knees preferably. Applications of tincture of iodine or black soap will often serve to cure this infantile psoriasis. Before twenty the disease is rare, and most common between twenty and thirty. Treatment cleans up the patient, so to speak, but permanent cure is not obtainable by any remedy yet known. Alcoholism, pregnancy, or lactation may induce a relapse; and unrecognizable causes also bring about this unhappy result. The disease is not fatal to life, but often fatal to activity and happiness, its peculiar characteristics rendering its victim repulsive in shops and offices, and in general society. Heredity, a lowered standard of health, mental emotion, overwork, and injury, are set down as causes. Recent cases are worse in winter, older cases in the spring. It attacks both sexes indiscriminately, and rank and occupation have no influence.

Unless there are indications for arsenic in the general condition, the writer considers its employment questionable. Haslund, of Copenhagen, has obtained excellent results with iodide of potassium. Certain dermatologists think external remedies the only ones necessary. Oil of cade or tar ointment constitutes the classic treatment. But oil of cade has a disagreeable odor, acts more energetically than

chrysophanic or pyrogallic acid, and often produces acne. Chrysophanic acid is quick in action, inducing desquamation rapidly; but it requires most careful watching, as it stains linen and the hair, turns the skin purple, and brings about serious inflammations if it comes in contact with mucous membranes, to say nothing of a general intoxication. It may in some instances provoke violent skin lesions, or glandular and phlegmonous inflammation. Chrysophanic acid may be used with gutta-percha and chloroform, ten parts of the acid, ten of gutta-percha, and one hundred of chloroform. The latter, evaporating, leaves a protective substance that keeps out air and foreign bodies. Pyrogallic acid may also bring about constitutional disturbances, though less poisonous than chrysophanic acid. It stains linen black. Naphthol is without danger of any kind, but its action is slow. Aristol is uncertain. To remember that treatment can be palliative only is to be free from surprise and disappointment.

PNEUMONIC PARALYSIS.

This is the subject of Boulloche's *Thèse de Paris*, 1892. Pneumonia, like other infectious diseases, may induce toxic paralysis during the acute stage, or during the period of convalescence. That occurring during the acute stage may exist in some circumscribed location, resembles the hemiplegic type, and is often associated with aphasia. In the aged, this paralysis may be the only symptom of pneumonia. Paralysis occurring during the period of convalescence is usually diffuse, most marked in the lower extremities, and capable of bringing about muscular atrophy. In paralysis due to pneumonia there is often no definite lesion whatever. Then again, there may be found more or less trivial manifestations of abnormal conditions of the brain, as meningitis and softening; and similar slight appearances of meningo-myelitis, softening, and multiple sclerosis in the cord.

Uterine Fibroid and Syphilis.—Prochownick has distinctly traced a relation between constitutional syphilis and fibromyoma of the uterus in certain cases which he has reported. The administration of mercury and iodides led, in these cases, to a distinct, though not very marked, diminution in the size of the tumor, while pain and flooding disappeared. To the objection that these so-called fibroids might have been gummatous deposits in the uterus he replies that the hardness and other characters of the tumors all indicated fibroid disease, while there were no signs of breaking down and no cicatricial contractions on the surface of the tumors, such as are observed in gummata. In two cases of fibroid disease, where the patients were free from syphilis, iodides and mercury did no good whatever. Prochownick has no belief in any specific action of these drugs on fibroids. On the other hand, he finds that syphilis may set up chronic metritis and endometritis. Such cases defy the curette and other kinds of local treatment, but may speedily be cured by antisyphilitic remedies. Prochownick is not inclined to attempt any explanation of the origin of myoma uteri. He inclines to the theory that the germs of myoma lie dormant for years, and set up a tumor in response to some undetermined stimulus which most probably arises in the blood vessels.—*British Medical Journal.*

News of the Week.

The Corner Stone for the new building of the Post-graduate Medical School and Hospital will be laid some time during November. The address on the occasion will be delivered by Dr. T. Gaillard Thomas.

Increase of Insanity.—According to the *British Medical Journal* the percentage of the insane to the general population has steadily risen during the past ten years from 28.83 to 29.88 per ten thousand.

Queen Victoria's Ostrich has been homesick, necessitating the administration of castor oil. Shortly after the dose the royal bird became quite animated.

Dr. Edmund C. Wendt, the Medical Commissioner of the Medical Record to the Riviera, is on his way to his home in this city. His interesting reports while abroad will be remembered by our readers.

The Southern Surgical and Gynecological Association.—The next meeting of this Association will be held in Louisville, Ky., November 15, 16, and 17, 1892. The preliminary programme, recently published, gives promise that this will be an interesting meeting. The President of this Association is Dr. J. McFadden Gaston, of Atlanta, Ga. Members of the medical profession are cordially invited to attend.

Dr. J. Collins Warren, of Harvard Medical School, has accepted the Executive Presidency of the section on Medical Pedagogics of the Pan-American Medical Congress.

Dr. Frederick Peterson has been appointed Professor of Neurology in the University of Vermont.

Medical Society of the County of New York.—The eighty-seventh annual meeting, October 24th, was devoted to the election of officers and reading of reports. The election resulted as follows: *President*, C. C. Lee; *First Vice-President*, William Stevens; *Second Vice President*, Robert Abbe; *Secretary*, Charles H. Avery; *Assistant Secretary*, William E. Bullard; *Treasurer*, John S. Warren; *Censors*, G. H. Fox, A. S. Hunter, L. C. Gray, C. H. Knight, R. Van Santvoord. The annual dues were continued at three dollars. The Treasurer's report showed a balance in the treasury. The propriety of taking steps to acquire a permanent home for the Society was discussed. Among the good results of publishing a directory was that it had led to prompt payment of dues, there being at present about one-tenth as many delinquents as formerly. No prize was awarded for essays.

Nineteen Papers on Club-foot were read at the last meeting of the American Orthopedic Association, and the subject ought now to rest on a firm basis. Such firm basis seems to be that there is no single treatment for club-foot, but that some cases should be treated by operation, and others should not; and that the operations indicated are sometimes bone-cutting, sometimes tendon-cutting, sometimes *brisement forcé*, and sometimes combinations of all these.

Medical Women in England.—The recent decision of the British Medical Association, to admit women as members thereof, has brought out the fact that the number of women whose names appear on the Medical Register is much greater than was supposed. A few years ago there

were but eight women practising in England; now, however, there are one hundred and thirty, and besides these, one hundred and forty more women are studying medicine at various schools in Great Britain and Ireland. At this rate of progress women practitioners may be expected in time to form a fair element—only in numbers, by the way—of the medical profession in this country. But their best sphere of labor is undoubtedly in India, where medical women are really much needed, and where they can be relied on to do necessary and useful work.—*Medical Press.*

Education and Marriage.—About forty-five per cent. of Vassar graduates are married.

Professor Billroth's Jubilee.—A series of festivals has recently been held at Vienna in commemoration of the commencement of the teaching career of Professor Billroth. The event has been converted into a sort of congress, which was inaugurated on October 8th by the assembling of the former pupils of this distinguished surgeon, in order to testify their gratitude for the advantages they had derived from his instructions. On this occasion Professor Czerny, of Heidelberg, was deputed to present to Professor Billroth a volume containing a record of his principal surgical works, and entitled "Contributions to Surgery." In the evening of the same day a dinner was given to Professor Billroth, at which numerous congratulatory speeches were made. The jubilee extended to the 11th, on which day his friends and admirers assembled to listen to an address by Professor Albert. The commemoration has excited great enthusiasm in the medical world of the Austrian capital.

Medical Practice in Mexico.—By Mexican law, says a correspondent of the *Lancet*, no person is allowed to practise medicine or surgery without having passed an examination conducted by properly appointed examiners. This examination consists of written papers and *viva voce* examination of cases in hospital thesis, and all must be passed in Spanish. This latter proviso may sometimes be relaxed. About a year ago I intended to try for a Mexican degree, and I wrote on the subject to the legal adviser of the firm I work for, asking how to proceed. He wrote me a long reply, in which he told me that it was quite useless my attempting to obtain a degree in Mexico City, as the examiners would pass no man not holding a qualification from Madrid (?), Berlin, or Vienna, but at the same time telling me I might obtain a degree in Zucatan or Menterez, if I got good letters to persons in authority. Practically, in country districts one is not interfered with, as the so-called doctors (Mexicans) are themselves unqualified men. In town men arrange with a Mexican doctor to sign death certificates. In my particular case, as I am a doctor only to men employed on these works, I am let alone; but I have to keep on friendly terms with the town authorities, and obey all sorts of peculiar rules and regulations.

The Pennsylvania Society for the Prevention of Tuberculosis has been formed and has commenced its crusade against this great modern scourge by educating the public by the publication of tracts for gratuitous distribution. The first one has just been issued; it is entitled "How to Avoid Contracting Tuberculosis." It contains much good advice, and is based upon the scientific demonstration of the contagious character of the disease, upon which the members of the Society evidently believe it is impossible to lay too much stress, and they have very little to say about "predisposition" or "the pre-tubercular stage," which we used to hear so much about.—*Journal of American Medical Association.*

First Successful Case of Symphyseotomy in this Country.—At the last meeting of the Philadelphia County Medical Society, Dr. Barton Cooke Hirst reported a case of symphyseotomy at the University Maternity Hospital, upon a young German woman with a kyphotic pelvis. The operation was readily done, and a live infant, a girl of normal development, was promptly delivered. The mother bore the operation well, and the infant's life was saved, which is a better result than could be obtained by craniotomy and not less good than Cæsarean section. It is believed that this case is the first in the United States in which symphyseotomy was performed as a substitute for the more grave Cæsarean operation, and its results warrant the hope that it may be found an efficient substitute for the latter in appropriate cases.

The Place of the Late Dr. Formad, of the University of Pennsylvania, has been taken by Dr. Joseph Macfarland and Dr. Henry W. Cattell.

Trinity Hospital.—Dr. Arthur L. Fisk has been appointed on the attending staff.

New York Hospital.—Dr. Arthur L. Fisk has been appointed Surgeon to the out-patient department, in place of Dr. Charles A. Powers, resigned.

Why Medical Science Makes Slow Progress.—In his "History of England in the Eighteenth Century," Mr. Lecky has the following passage: "Hardly any other of the great branches of human knowledge is at present so backward, tentative, and empirical as medicine, and there is not much doubt that the law of supply and demand is a main cause of the defect. Almost all the finer intellects which are devoted to this subject are turned away from independent investigations to the lucrative paths of professional practice; their time is engrossed with cases most of which could be treated quite as well by men of inferior capacity, and they do little or nothing to enlarge the bounds of our knowledge."

The Incomes of Berlin Physicians.—In Berlin there are 1,747 doctors, nearly half of whom make less than $750 a year. Only about 170 make more than $2,500. These figures are based on the income-tax, and it is just possible that the Berlin physicians take an especially gloomy view of their collections at the time of certifying to their financial condition.

Statues of Eminent Doctors.—"I cannot recall to mind," writes the Paris correspondent of *The Lancet*, "where in England there is to be found a statue to any of the good and great men in our profession who have an undoubted claim on humanity, unless it be the single exception of Harvey's in Folkestone. Not so throughout France. Paris alone has statues to Broca and others, and will shortly have one to Ricord, for which the President of the Republic has approved the sanction of the Prefect of the Seine authorizing the erection of the statue in one of the public places of Paris. To-morrow also will be inaugurated at Morlaas the bust of Depaul, formerly the

well-known professor of obstetrics at the University of Paris." America has as yet but one statue of a medical man, viz., that of Dr. Sims.

Inebriety among Women.—The *British Medical Journal* gives a startling picture of the increase of inebriety among women in England, and also in other parts of the world. The number of women convicted of drunkenness in England and Wales, rose from 5,673, in 1878, to 9,451, in 1884. Last year 33,000 females were convicted of drunkenness in the United Kingdom. In London in one year the increase of convicted women was 500. In Glasgow 10,500 women were sent to prison. Of this number 450 were sent to jail from six to thirty-four times during the year. In Ireland the champion female inebriate record-breaker has been arrested over 700 times, and she is only forty years of age. In this city about 10,000 women are arrested yearly for drunkenness.

St. Luke's Hospital.—The annual meeting of the Board of Trustees of St. Luke's Hospital was held on St. Luke's Day, October 18th. Dr. Frederick Barnard, who has been Assistant Superintendent for the past twenty-three years, tendered his resignation on account of ill-health. Dr. L. Bolton Bangs resigned his position as attending surgeon, and he and Dr. Frank H. Markoe were appointed consulting surgeons.

Dr. Robert W. Greene, of this city, died suddenly on October 28th. He was born in Providence thirty-two years ago and was graduated from Brown University and, in 1887, from Bellevue Medical College in this city. For a time he was an assistant to Dr. Janeway.

Local Medical Practice Law.—The city of Bridgeport has enacted an ordinance prohibiting irregular and unlicensed physicians to practise in its limits. Connecticut has no medical practice law, and Bridgeport is taking measures for its own protection. The ordinance will undoubtedly have a good effect in stimulating general legislation as well as in clearing its neighborhood of quacks.

Hartford County Medical Association.—The centennial of the organization of this society was celebrated on September 26th. Many speeches were delivered by members and by medical and non-medical guests, followed by a reception and dinner.

The New Clinical Amphitheatre at the Philadelphia Hospital was opened on Saturday, October 1st.

Medical Women in Bosnia.—Bosnia has enacted a law for the appointment of a medical woman to the capital of each district, with the official title of *Wundirztin, i.e.*, a grade lower than that of Doctor of Medicine.

How Does She Do It?—Chicago, located on low ground, with poor water, bad streets, incomplete sewerage, and an epidemic of typhoid fever, announces a death rate of 17 per 1,000. New York, with pure water, good sewers, and no epidemic has a death-rate of over 22 per 1,000. One explanation may be that Chicago has a population of 1,400,000, as working basis for vital statistics.

A Fit Appointment.—Dr. John C. Sundberg, a former editor of the *Pacific Medical Journal,* has been appointed United States Consul at Bagdad, a post of considerable importance commercially as well as scientifically, as the Doctor will make important investigations relative to epidemiology and contagious diseases under the direction of the Smithsonian Institute at Washington. It gives us great pleasure, says the *Journal,* in chronicling Dr. Sundberg's good fortune in obtaining this post, because we believe he is one of the ablest men in the profession to fill it. He is fond of India, having had several years' experience in that country, and he is particularly well qualified on account of his scholarly and linguistic attainments, speaking not only Norwegian—his native tongue—Swedish, Danish, German, and French, but also several oriental languages, including Persian, Arabic, Hindustani, and Bengali.

Culture and Professional Success.—The short paper on "Culture and Professional Success," which appears in the current number of the *New Review,* from the pen of the late Sir Morell Mackenzie, is strongly in favor of a wide general culture as the best preparation for the more special training which every profession demands from those who aspire to enter it. The author's grounds are various, but they may be summed up under two heads: First, that such culture confers breadth and flexibility of mind and renders the acquisition of special knowledge easy; and, secondly, that it develops a knowledge of human nature, and hence assists in enabling us to treat our clients or patients not as mere "cases," but as complex, sensitive, and highly organized men and women.

The Mecca of Medical Women seems to be Switzerland. That country was one of the first to open its university doors to the ladies, and it has been popular with them ever since. At the present session there are, among 349 foreign students, 148 *dames* and 201 *messieurs.* The Swiss ladies themselves do not take so kindly to medicine, apparently, for there are only 9 natives in the medical schools. Among the 953 medical students in Switzerland, one-sixth are women.

One Dollar Commission.—Not long ago, and possibly at present, one or two drug-stores of a large American city kept a series of Yale-locked boxes behind the prescription counter, each marked with the name of a physician of the city. The boxes had a slot sufficiently large to admit a silver dollar, which, wrapped in the prescription, was placed in the box, when, by the careful direction of the writer, the patient had been piloted to the store. The special key was carried by the honorable gentleman whose professional card was upon the box. If this seems ancient history, there lies before us a personal letter to a Philadelphia physician, dated September 30, 1892, in which, with blank order-checks, etc., at command, a "mineral spring" company offers to give the physician one dollar for "each order, at $5 cash with order, you send or cause to be sent to us," for a dozen bottles of the medicinally and miraculously potent water. "It must not be understood as a discount allowed to your patient."—*Medical News.*

The Hospital Saturday and Sunday Association met on the evening of October 17th, at St. Luke's Hospital, Mr. George Macculloch Miller presided. A committee consisting of the Revs. Thomas M. Peters, W. T. Chambers, and Henry F. Day was appointed to interest the churches in the hospital collection to be made at the different churches on the last Sunday in the year. Three hundred hospital collection boxes are to be placed in private residences.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, October 20, 1892.

ALFRED L. LOOMIS, M.D., PRESIDENT, IN THE CHAIR.

THE meeting was held under the auspices of the Surgical Section, DR. JOSEPH D. BRYANT, Chairman.

Artery Forceps.—DR. CARL BECK presented an artery forceps which claimed to permit of rapid ligation without injury to the vessel or tissues. It could also be used as a needle-holder.

Intubation versus Tracheotomy for Acute Laryngeal Stenosis in Children—To what Extent, if at all, has Intubation Supplanted Tracheotomy?—DR. JOSEPH O'DWYER read a paper, opening the discussion on this subject. He said that while it would have been very easy to prepare a long paper upon it, he had found it difficult to prepare a short one. By acute stenosis of the larynx was meant the stenosis which occurred in fibrinous, diphtheritic, or membranous croup. If unrelieved by mechanical means this would prove fatal. The disease still continued one of the most fatal of early life. An illustrative case was related in which, in spite of intubation, which gave complete relief for about twelve hours, the temperature, pulse, and respiration increased, the latter to about eighty, and thirty hours after intubation the child died. Some would say there must have been broncho-pneumonia, yet the autopsy showed none, death having resulted from blocking of the bronchial tubes with pseudo-membrane as far as could be traced.

Not uncommon causes of death were catarrhal pneumonia, nephritis, and paralysis. If mechanical obstruction from membrane in the larynx alone were the only question in these cases, intubation would certainly be a most efficient method and should have scarcely a failure.

As it would be impossible in a brief paper to answer all the charges that had been made against intubation, especially the accidents and dangers, he would confine his remarks upon this part of the subject to a consideration of criticisms in a paper by Dr. Lovett, of Boston, in which was recited the experience with intubation in the Boston City Hospital. The principal, if not the only, cause of the bad results obtained at that institution was that the operations were performed by a number of different men, more or less inexperienced, who appeared on the staff by rotation. The only difficulty met with by experienced operators was the tendency of the tube in a few cases to engage in the subglottic fold, and yet the experienced operator meeting with such difficulty knew how to overcome it. An analysis of the accidents cited by Dr. Lovett showed clearly that they were in almost all instances due to the operation having been done by inexperienced men or to carelessness. Sudden death occurring while the tube was in the larynx must be due either to obstructing membrane or to heart paralysis, but more frequently did pushing of membrane before the tube give relief than cause stenosis.

One of the gravest objections which had been offered to intubation was the difficulty afterward of feeding. When, however, the tube was introduced with care and skill this difficulty existed only exceptionally. If the parts were injured by clumsy efforts to pass the tube, it would be remarkable if the little ones did not suffer during deglutition afterward. When the operation was really called for the patient was getting but little air, and this little could be cut off only a very short time without endangering life. Even ten seconds was not safe. To pass the tube, then, as speedily as should be done and cause no injury required practice, which should be gained on the cadaver and in different subjects, for some subjects were more difficult to intubate than others. Tracheotomy implied no such danger. No great amount of surgical skill was required to do tracheotomy, but subsequent intelligent nursing was almost an absolute necessity. One practice, therefore, called for trained nurses, the other for a trained operator.

It appeared that at the Boston City Hospital intubation had been followed by about twenty per cent. recoveries, and tracheotomy by about twenty-nine per cent. One could hardly believe that the smaller number of recoveries following intubation could have been due to the operation so much as to the manner in which it was performed, for the percentage of recoveries at the Willard Parker Hospital had been thirty-eight, and another operator had had thirty-four per cent. of recoveries in over one hundred cases. In fact, the percentage of recoveries at the Boston City Hospital had been lower than any individual results that he knew of, and there were sufficient reasons for it.

Of the factors which influenced the prognosis in intubation and tracheotomy, age was the most important. The results of intubation in the first year of life were almost *nil;* the third year was better than the second, and after the third year and a half age did not play an important rôle. Lovett had said that tracheotomy saved one in fourteen under two years, while intubation in Dr. O'Dwyer's cases had saved one in six

Secondary tracheotomy was not likely to prove of much avail when intubation failed because of membrane extending to the trachea. The author thought that from all the facts presented the conclusion seemed inevitable that intubation accomplished practically all that tracheotomy accomplished without any of the unpleasant features of the latter operation.

DR. LEWIS S. PILCHER, of Brooklyn, continued the discussion with a paper. He thought that in any case of exudative laryngitis it was absolutely impossible to exclude the existence of diphtheritic infection. This was of importance in considering operative measures. The laryngeal affection was but the effect of a general disease. The general effects of that disease were to be guarded against, and local emergencies were to be prepared for.

Granting that both intubation and tracheotomy would remove the laryngeal stenosis, which was best adapted to assist the system in its struggle against the general infection? The answer to this question involved three points—blood aeration, local cleansing and antisepsis, and general nutrition.

Intubation as well as tracheotomy met the first point, and intubation admitted air which was warmed in the natural passages, but it did not admit so well of meeting further obstruction down the trachea, and it was also liable to detach membrane in the larynx and push it before the tube. To meet these results it might be said that theoretically tracheotomy could be resorted to secondarily, but practically it was then too late.

Tracheotomy permitted of the air being warmed and medicated, and of removal of obstructing exudate coming up into the trachea. It also permitted of carrying on nutrition perfectly, whereas, judging even by the statements of Dr. O'Dwyer himself, he inferred that the presence of the tube in the larynx caused considerable difficulty with feeding the child. It would seem, then, that the three points were met better by tracheotomy than by intubation. Whether these advantages of tracheotomy were real or imaginary could as yet hardly be determined by statistics. The difference in the character of the cases, and the fact that intubation was much more likely to be permitted than tracheotomy, formed the greatest obstacles in the way of a correct judgment.

He would accept Dr. O'Dwyer's personal experience with intubation without question, and among the first set of cases which he had reported twenty-four per cent. had recovered; later ones had given even a better result. Of 21,000 cases of tracheotomy collected by Lovett, twenty-eight per cent. had recovered. Dr. Pilcher's own results from tracheotomy for membranous laryngitis had been 22 recoveries out of 66 cases, or thirty-three and a third per cent. On the other hand, one of his neighbors had in-

tubated a number of cases and had fifty per cent. recover.

While he did not wish to gloss over the disadvantages attached to tracheotomy, yet he thought intubation answered the indications for surgical interference when the diphtheritic exudate had formed within the larynx and trachea much less perfectly than did tracheotomy, and that therefore, as a rule, it should not be considered a substitute for tracheotomy in such cases.

To What Extent has Intubation Supplanted Tracheotomy? — To this question Dr. Pilcher answered, evidently to a very considerable extent during the past few years in this country. Tracheotomy would always be accepted as a last resort unless it were in institutions, and he did not doubt but what for this reason intubation would save many lives which would without it be lost, parents rejecting what he regarded as the safer procedure until too late, if they permitted it at all. His neighbor had within four years intubated 140 cases, 40 of which, or twenty-nine and a half per cent. recovered, whereas Dr. Pilcher had had opportunity to tracheotomize only 66 cases in seventeen years, with recovery of one-third. Yet the cases of diphtheria in Brooklyn had remained about the same. This showed that intubation was both supplanting tracheotomy and also making a new field for itself. He thought there should be pavilions or houses scattered in different parts of the city, where diphtheritic cases could be readily transferred and put under skilled medical attendance, and as soon as the emergency arose a surgeon connected with the hospital of which these were a branch should be called to do tracheotomy. This would show better actual and comparative results for the bloody operation.

Dr. George W. Gay, of Boston, read a paper in continuation of the discussion. The statistics which he brought from the Boston City Hospital were later than those of Dr. Lovett, although they did not differ much; they showed about four per cent. in favor of the older operation.

In the majority of cases the result of intubation depended upon three conditions: laryngeal obstruction, bronchial croup, and septicæmia. The type of the disease, more than anything else, determined the result after the operation. In very many instances the operation was satisfactory although the result itself was fatal. The patient succumbed to sepsis or other trouble, but not to dyspnœa. In 110 cases at the Boston City Hospital in 75 intubation resulted in immediate and complete relief of the dyspnœa, partial relief in 22. Surely any method which gave immediate relief in nine cases out of ten was worthy consideration. As to whether tracheotomy would give relief where intubation failed, it might where the tube pushed membrane before it, enhancing the dyspnœa, but this accident was not common. But where the dyspnœa was due to extension of the morbid process or sepsis there was little hope. In fifty-eight cases of secondary tracheotomy at the Boston City Hospital, only seven recovered.

The author attributed many of the failures with intubation to employment by unskilled hands. He also said that the diminished number of tracheotomies at the Boston City Hospital and the much larger number of intubations showed that the latter had considerably supplanted the former. In the majority of cases in children under seven years intubation was preferable to tracheotomy.

Dr. F. E. Waxham, of Chicago, could not be present, and sent his recent statistics of intubation. He believed intubation would yield results which could not be obtained by tracheotomy. His cases were not selected, but included all requiring it which came under his observation. The number of cases for the several years of age were given, with percentage of recoveries. In all he had intubated 421 cases, with 146 recoveries, or 34.67 per cent. In the first 100 cases there had been 27 recoveries; in the second, 34 recoveries; in the third 40 recoveries, and in the last 21 cases there had been 7 recoveries.

Dr. A. Jacobi referred to a discussion on this subject before the Academy four or five years ago, at which it was all intubation, while to-night it had been part intubation and part tracheotomy. At the former meeting he endorsed intubation, notwithstanding the fact that he had been a pioneer in the performance of tracheotomy in this country, having resorted to it in a great many cases. Indeed, his statistics with tracheotomy must now run up to six hundred or seven hundred. The reason why he then and now endorsed intubation in preference to tracheotomy was the fact that it was very easy among the public at large to get permission to intubate, while it was very difficult to get permission to tracheotomize. Because of this difficulty the latter operation was often put off until it was known to be almost certainly too late. Yet now and then a case operated upon at so late a stage did recover, and it justified interference even in apparently hopeless cases. Another weighty reason for turning to intubation was the fact that, no matter what amount of care was exercised, infection and erysipelas or diphtheritic deposit might take place at the tracheotomy wound. Moreover, tracheotomy sometimes necessitated leaving the tube in a long time. While endorsing intubation, he confessed to not having performed it himself, for the reason that Drs. O'Dwyer, Huber, or others skilled in the operation had been within so convenient reach.

Dr. Francis Huber sent a note in which he said that both tracheotomy and intubation would relieve the dyspnœa, but after considerable experience with both measures he expressed preference for intubation as a primary procedure in laryngeal diphtheria. The mortality of either operation varied in different epidemics, the variations depending upon other conditions than the operation. Both procedures might present intrinsic difficulties in individual cases, and might be attended by unforeseen complications. Unfortunate results from inexperience and the use of improper instruments could not be placed as objections to intubation. The difficulties of technique in young children were not limited to intubation, but were often equally great in tracheotomy. Whatever might be the difference of opinion regarding the comparative results in older children, under two years and a half intubation gave a higher percentage of lives saved. He incidentally mentioned the great value of bichloride of mercury in diphtheria, as recommended by Dr. Jacobi.

Dr. Berg had performed intubation in a considerable number of cases, and in all it gave immediate relief to the dyspnœa, but the picture was apt to change within twenty-four hours. The following objections to the procedure had led him to practically abandon it: 1, Interference with feeding and nutrition, which was of such great importance; 2, interference with the administration of a solution of bichloride of mercury, as recommended by Dr. Jacobi, which also was of extreme importance, for, greatly to his surprise, he had found since adopting this treatment that its curative powers had been so great as to lessen the number of cases requiring intubation or tracheotomy fifty per cent. The bichloride, unfortunately, would act on the tube.

Dr. W. P. Northrup related some observations in Vienna and London during the past summer, illustrating the right and the wrong way of choosing tubes and introducing them into the larynx. He believed that, as a rule, difficulty from feeding the child wearing the laryngeal tube came from its unskilful introduction and injury to the parts.

One speaker said he had seen a number of patients wearing the laryngeal tube at the Willard Parker Hospital, and taking food without any difficulty, and that the house physician there employed irrigation with bichloride freely without causing any injury to the tube.

Another speaker thought the weakness following some hours after the introduction of the tube was due to inability to fully respire and finally complete stenosis and death. A second objection to the tube was the liability

to cough it up during the absence of the physician. He had lost one patient from that cause.

Dr. Johnson, of Jersey City, was not sure that where the tube was coughed up the cause was always membrane; nor did he think dyspnœa the usual cause of a change of the picture for the worse about twenty-four hours after introducing the tube.

After the discussion had been closed by the authors, the Academy listened to the report of the committee on conference with the Health Board, read by Dr. R. H. Derby. The report was approved and ordered published in the medical journals of the city.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, September 28, 1892.

J. S. Thacher, M.D., Vice-President, in the Chair.

Apoplexy of the Medulla Oblongata.—Dr. S. T. Armstrong exhibited a specimen of this condition. The patient, a man, fifty-four years of age, was admitted to the Harlem Hospital on September 22, 1892, having a family history which was negative as regards alcoholism and syphilis. He stated that he had been in good health up to September 1st, when he fell and fractured the tenth rib. With the exception of some pain on inspiration, he did not feel sick, and was able to continue at his work until the afternoon of the 15th, when he was suddenly seized with severe pain in the head, became dizzy, and staggered toward the sight side. With this there was numbness of the right side of the body and face, partial loss of power in the right arm and leg, and difficulty in swallowing, and from the onset of these symptoms he was troubled with insomnia. His condition remained much the same for the next three days, after which he was confined to bed. At the time of his admission, on the 22d of September, he was conscious, and able to give the history of his case. There was already motor paralysis of the right side of the body, and of the labial muscles on the left side of the face; on protruding the tongue it was deflected to the right; muscular and tactile senses were not affected, and the pupils were normal. There was great difficulty at this time in articulating and in deglutition; his pulse was 80, and his respirations 32 and somewhat labored. The urine contained albumin and a trace of sugar. When first seen by the speaker, on the day after admission, his condition was that described by the house-physician in the preceding history, and there was no special change until 1 A.M. on September 24th, when he became actively delirious, trying constantly to get out of bed, and when he did attempt to stand up he fell toward the right side. His pulse at this time was 85, the respirations 30, and the temperature normal. The pulse soon became rapid and irregular, the respirations slower, and at 5 A.M. he died of apnœa, the pulse continuing to beat for some time after the respirations had ceased.

At the autopsy the cerebral vessels were found to be congested, and there was a small hemorrhagic opening on the right side of the medulla oblongata, between the anterior pyramid and the olivary body. The roots of the ninth nerve were also seen to be involved. The floor of the ventricle was probably also implicated. The condition of the urine was probably due to an affection of the kidneys, but these organs had not yet been examined microscopically. Death resulted apparently from the gradual softening consequent upon the hemorrhage. These cases are quite rare, and therefore this one was deemed worthy the consideration of the Society.

Perforating Round Ulcer of the Stomach.—Dr. E. Hodenpyl presented such a specimen. The patient was a young woman, nineteen years of age, who, up to the time of her last illness, gave a negative family and personal history. She had enjoyed good health up to last June, at which time she began to suffer from sharp pains in the left hypochondrium. These were quite severe for two weeks, and continued with diminished severity for the greater part of the whole summer. Quite recently they again became more troublesome, and on September 6th, while going upstairs, she was suddenly seized with intense pain in this region, followed by vomiting and marked prostration. When admitted to the hospital, two days later, she presented the usual signs of general peritonitis, and she died six days after admission.

On opening the abdominal cavity at the autopsy the whole of the organs were concealed by a thick layer of fibrin and pus, which formed a sort of anterior cavity in the abdomen, which communicated with an opening in the stomach through which the contents of the stomach passed. The perforation was on the anterior wall of the stomach, near its middle, and measured two centimetres in diameter; the edges were perfectly round and smooth, the surrounding wall of the stomach was thickened, and the mucous membrane looked fairly normal. Near the œsophageal opening were small ulcers which involved only the mucous membrane.

A Specimen Showing the Result of Osteoclasis.—Dr. R. H. Sayre exhibited a specimen which had just been given him by Mr. Nicholas Grattan, of Cork, Ireland. It was removed from a child, about five years of age, upon whom he had performed osteoclasis for genu valgum about three or four months before the child died of a tubercular meningitis. The operation was done with Mr. Grattan's osteoclast. The specimen shows the changed direction of the femur, but there is no callus, and no irregularity of the bone, and were it not for a sharp twist in the outline of the bone, one would hardly notice that any violence had been done to it. The speaker said that he had operated with Mr. Grattan's osteoclast, and had noticed that the feeling of "the break" was peculiar; the sensation was as if the periosteum had not been torn, and something still held the broken fragments in position.

Dr. S. T. Armstrong said that an examination of the specimen made it doubtful if there had been anything more than a "green-stick" fracture produced at the operation.

Dr. Sayre replied that the click produced at the time of the fracture was so sharp and distinct that he was inclined to think that the instrument did really produce a complete fracture. He had never believed before this, however, that the periosteum was sufficiently elastic to remain intact under the application of such a force.

A Curious Anomaly of the Foot.—Dr. R. H. Sayre also presented a growth which he had removed from the foot of a child, and which resembled a thumb. On one foot there was an extra toe, between the big toe and the next one, and the end of the big toe was turned in almost at right angles with the other phalanges. On the other foot the small toes projected in various directions and were imperfectly provided with joints and nails. Instead of a large toe on this foot there was a digit, which in appearance and in the manner of its attachment resembled a thumb. It possessed an articulation like that of the thumb, and when the boy walked it was turned in under the sole. This "thumb" was removed by amputation.

Dr. Sayres also referred to a specimen which he had hoped to present. It was from a case of angular anchylosis of the knee-joint with subluxation backward. After chiselling the patella loose, it was found that the bones could not be replaced by any reasonable force. The joint was next opened, and it was then ascertained that the spine of the tibia had grown up into the intercondyloid notch of the femur, and projected about three-fourths of an inch. It was the first time that he had seen such a marked hypertrophy of this spine in any case on which he had performed resection.

The Society then went into executive session.

The Smallest Feet are said not to belong to the Chinese women but to those of Southern France. Cinderella was born in Avignon.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, October 17, 1892.

SAMUEL B. W. MCLEOD, M.D., PRESIDENT, IN THE CHAIR.

Cholera and Its Treatment.—DR. CHARLES A. LEALE read a paper, opening the discussion on this subject. He accepted the view held by competent judges that the cause was the comma bacillus; also that the disease originated in Hindoostan, and from there spread to other countries; but as to the origin of the first bacillus he knew as little as about the origin of the first of any other living thing. If filth was necessary to its continuous propagation, there was sufficient reason for its persistence in India. But, curiously, the disease died out in other countries within a few years after starting from India, whatever might be the condition of climate, filth, etc., in those other countries. The author thought it possible the germs were at times carried in great numbers and to great distances by wind-storms. He referred to some personal experience with cholera in this city. He had seen patients recover who had been in cramps three days, and others die within forty-eight hours. The cramps in the legs had best been overcome by compression-massage with the hand. If the physician saw the cases early during the premonitory stage, he could save nearly all. The first symptoms were abnormal secretion by the glands of the mouth and stomach, with disagreeable taste, nausea, and eructations of gas, then vomiting, then stomach cramps, then intestinal symptoms and passages.

In some cases, even of apparent death from rapid exhaustion, the patient could be revived by rubbing the blood toward the heart and applying heat. It was necessary in some cases to supply the blood with its lost constituents in order to save life. How could this be best accomplished? By the transfusion of blood or of any liquid into the veins? No, never! Most patients would be killed by the method itself. Should we try the introduction of any sterilized solution under the skin? No. There was a much simpler method. Nor should we give ice or drinks at a temperature much lower than the body. By the stomach or rectal tube one could easily flush the gastro intestinal tract with warm mutton-broth, or solution of sodium chloride, or egg albumin, enough of which would be absorbed to replace the lost constituents of the blood.

Conditions were mentioned under which cholera nostras might exist, even to the extent of misleading one to suppose there was an epidemic of Asiatic cholera.

The Choleriform Diarrhœa of Young Children; Its Differentiation from Asiatic Cholera.—DR. J. LEWIS SMITH read part of a paper in the course of which he touched upon the diagnosis between sporadic cholera infantum and Asiatic cholera in children. He thought little importance could be attached to the rice-colored stools in infants as pointing to Asiatic cholera. One must be guided largely by the fact whether cholera Asiatica was present in the vicinity; then, also, cholera infantum was ordinarily a disease of the hot months. Both affections might be of bacterial origin, but the comma bacillus which was the cause of Asiatic cholera was not the cause of cholera infantum. Careful autopsies justified the statement that cholera infantum was a most severe gastro-intestinal catarrh. There was a consensus of opinion, he believed, that it was not contagious.

The Bacteriological Diagnosis in Cases of Cholera in New York.—DR. EDWARD K. DUNHAM illustrated on the screen and under the microscope the comma bacillus as cultivated from the recent cases of cholera in this city, and contrasted its appearance and behavior with those of some other germs.

The Probable Advantages of Quarantine, and the Proper Methods of Conducting it.—DR. JOHN GODFREY, of the United States Marine Hospital Service, in discussing this subject, said he would make only a few general remarks. He was one who believed in positive advantages of quarantine. There were also disadvantages. He quoted a British sanitarian who had said that we knew not what was the cause of certain diseases against which it had been attempted to establish quarantine, and therefore confidence could not be placed in quarantine measures for keeping them out; that if the country were kept in a proper sanitary state quarantine would not be necessary. It was because of this uncertainty of opinion as to the spread of disease that methods of quarantine and prevention in general differed. The first necessity in establishing an effective quarantine was to convince everybody of its utility; then we might hope for the proper method of conducting it. Quarantine could be enforced in one of two ways: 1. By killing the germs before they entered the country. 2. By non-intercourse with countries where cholera existed. Or what might be called a compromise between the two methods might be adopted. In order to cope with an enemy successfully one must know his weapon; must know his vulnerability. Without such knowledge he could not proceed scientifically. Regarding cholera, science might perhaps talk ex-cathedra, but regarding some other diseases against which we established quarantine, science could not thus speak. Who could say, for instance, that bichloride, instead of killing and keeping out germs of yellow fever, did not in reality invigorate them? Let not science attempt to say steps had been taken which would keep out a contagious disease, unless it were known to be a fact.

Speaking of what commerce would say, Dr. Godfrey thought that a quarantine which would prevent epidemics without stopping the wheels of commerce was an ideal quarantine, but which was yet to come. It was a question of dollars and cents on one hand and of human life on the other. Those who should argue for quick commerce, although it should result in the death of a few of the steerage passengers, might prefer to have all the commerce of the world destroyed rather than lose one of their own family by a disease which could have been prevented.

Dr. Godfrey's view of a proper quarantine system implied an efficient officer who was a bacteriologist and scientist; whose position did not depend upon a political pull; a laboratory fitted with all necessary appliances; sufficient skilled help.

The Pan-American Medical Congress and Its Influence on Sanitation and Quarantine.—DR. WILLIAM PEPPER, of Philadelphia, President of the Pan-American Medical Congress, impressed the benefits to accrue from such a congress, particularly in relation to prevention of spread of epidemic diseases between the several ports and countries of North and South America, and to showing our southern neighbors the facilities here for medical education and literature. At this congress not only cholera, but also yellow fever, would receive consideration.

DR. STERNBERG being called upon, referred to the work done regarding quarantine at the International Medical Congress held in Rome. He had long been an advocate of a national quarantine system; had long been of the opinion that it was not right for the health of the whole country to be in the hands of one State. He believed national quarantine should be maintained at national expense. He also thought it was a great imposition upon shippers of commerce that they should bear the whole expense, instead of all those who were benefited by commerce. He ridiculed the farce of disinfection for a fee.

DR. GIHON said that in the navy they kept cholera out by rigorously excluding any possible medium of bringing it on board, and should it manage to enter they rigorously isolated the patient and carried out disinfection. He thought that was all that could be done at any quarantine establishment. It was a mistake to place dependence on local sanitation for prevention of spread of cholera. Cellars remained dirty and unventilated in American cities, no matter what outward cleanliness was apparent. Supplementary of what Dr. Pepper had said regarding

the Pan-American Medical Congress, he urged upon all who could do so to attend the meeting of the American Public Health Association to be held in Mexico.

Dr. Nye suggested that they send medical missionaries over to Asia, where cholera was endemic, and have them clean up.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

MR. HUTCHINSON ON NAMES, DEFINITIONS, AND CLASSIFICATIONS IN DISEASE—SIR WILLIAM SAVORY ON SYMPTOMS IN PERSPECTIVE—INTESTINAL OBSTRUCTION WITH THROMBOSIS OF ABDOMINAL AORTA—NÆVUS OF PERITONEUM—MYXŒDEMA SUCCESSFULLY TREATED BY INJECTIONS OF FRESH THYROID JUICE.

London, October 22, 1892.

Among recent medical utterances Mr. Hutchinson's Presidential Address to the Medical Society of London deserves a foremost place. It was delivered last Monday evening at the opening meeting of the Society for the present session. Mr. Hutchinson said there was need for a large reform in medical nomenclature, for better classification of disease, and, above all, for more precise definitions of the terms used. As soon as the physician or surgeon tried to get out of routine, he felt himself cramped and hindered by our narrow and conventional systems of nomenclature and our fragmentary classifications. He would ask the neurologist whether such names as tabes dorsalis and epilepsy did not now each include a number of separate maladies which required separate grouping. He would ask the physician whether he was content with the terms "diabetes" and "hysteria," while respecting dermatology he would venture to offer his own opinion that there were at least twenty maladies classed under the name of lupus which required to be discriminated, and, putting all these aside, some five or six different types of "tuberculosis of the skin." Names, definitions, and classifications were far more difficult in our department of natural observation than in any other. The clumsy expressions "substantive disease" and "morbid entity" were probably in use among us far oftener than sound knowledge of the facts would justify. A distinction must be drawn between a description and a definition. The former took cognizance of the outward appearances of the disease described, and might be developed in much detail; the latter should be concise, and should exclude all that was extraneous.

He would take the names of three common diseases—phagedæna, erysipelas, diphtheria—and try to define them, and at the same time to show how their definitions affected their position in any system of classification founded on natural affinities. Phagedæna, it might be said, was not the name for a disease, but rather for a certain condition occasionally assumed by the inflammatory process. He would assume that there was no difference of kind, but only of severity, between simple phagedæna, sloughing phagedæna, and hospital gangrene. It was also exceedingly probable that noma and cancrum oris were really of a closely similar nature, though of a more severe type, with the phagedæna so often encountered in syphilis. Granting these data, we had first to note that it was undoubted that cancrum oris, noma, and syphilitic phagedæna might begin quite independently of contagion.

It was, therefore, not a specific malady in the sense of being dependent upon the implantation of a specific virus. We must next record that, although these inflammations might occur to persons seemingly in robust health, they were almost invariably those who had suffered from syphilis or, in the case of noma and its congener, recently passed through a specific fever. We might also assert, but with more hesitation, that the use of mercury had often preceded not only the syphilitic forms, but also those seen in children. We came, then, to the definition of phagedæna as a locally destructive form of inflammation, which attacked sores and wounds, which varied much in severity in different cases, and which occurred for the most part in those who had recently suffered from some specific disease. To this must be added the important proposition that, although capable of spontaneous origin under the conditions mentioned, it was infective to adjacent parts, and might become contagious to other patients with open wounds. Phagedæna was not to rank with the specific fevers, though it might become epidemic. It was a type form of specialized inflammation, occurring under certain known conditions of predisposition.

Mr. Hutchinson then discussed erysipelas and said he came to the conclusion that this was a name for a form of inflammation presenting peculiar features, very infectious to the tissues of the patient, easily spreading to the wounds of others, and of which one attack left proclivity to a second. We had to add to this—unless we insisted that medical and traumatic erysipelas were two different things—that it was capable of origin from exposure to cold and without either wound or contagion. This definition placed it by the side of phagedæna, and just as it would be more correct to speak of phagedænic inflammation than of phagedæna, so it would be better to use the expression "erysipelatous inflammation" rather than erysipelas, since the latter was too suggestive of a substantive disease which always ran the same course and always presented the same conditions.

The facts as to diphtheria were exactly parallel with those as to erysipelas and phagedæna. All three occurred sporadically and in connection with individual proclivity rather than specific influences, yet all might become contagious, prevail as epidemics, and when they did so they kept close to the type. Diphtheritis was probably a more correct term. What was there to hinder us from defining this as a contagious inflammation of mucous surfaces, and chiefly of the throat, frequently attended by the formation of pellicles, infective by continuity in the patient, and easily spreading by contagion to others? It was wrong to make the formation of the false membrane a part of the definition, for that was to make the diagnosis of a disease depend, not upon its origin, but upon the degree of severity with which it developed certain peculiar phenomena which were common, but not invariable. He felt sure he should be criticised for not admitting to a foremost place in the definition of such affections as diphtheritic and erysipelatous inflammation the parasitic microbes which had been demonstrated to be usually present. While fully admitting their importance he was yet not convinced that they constituted the disease. The rôle of the bacillus in leprosy was far from being established, while it would be very premature to define any one form of lupus as being the product of the bacillus of tubercle. If we do so, we should at once have on our hands a number of closely cognate maladies which could not be so explained, and which it would yet be impossible to put wholly aside. In the disease known as rhinoscleroma the presence of a microbe had been demonstrated only in a few instances.

New names should be short and easily remembered, should be in the vernacular, should be available from the very beginning and such as the the observer himself might without indecorum apply, and should have in themselves no meaning, the reader being left to find that out by reference to the writings of the observer who first applied the names. These conditions excluded the use of the discoverer's name, which Mr. Hutchinson deprecated on other grounds also, though he remarked that such names, being meaningless so far as etymology went, had the negative advantage that they did not mislead. Narrating an anecdote told him by Dr. Billings, of a layman who had suggested that it would be more fair that a disease should be named after the patient, Mr. Hutchinson remarked that he had long adopted the plan though he never used the real name in public. Probably many of

as already did this in private. The present plan of making a small number of names suffice for a vast number of objects, and of slavishly grouping together under the same name diseases which differed widely, was one which had encumbered us too long. There was probably no better plan in aid of exactitude in clinical observation than to take "type cases," to follow them to their end, describe them in detail, and, wherever possible, to illustrate them by photography, or by drawings. By the side of the type case place all others which really fitted with it and none others. Anyone adopting this plan would be surprised to find how rapidly parallel cases of what he at first thought rare and exceptianal would accumulate. We were all too prone to diagnose (that was, to name) first and to observe afterward. To make a diagnosis ought to mean to recognize, so far as was possible, the real nature of a disease; it was too generally used as if it meant to give a name.

Mr. Hutchinson concluded his address with a few words about classification. Taking dermatology as an example, he asked whether it was not possible to attempt something in the way of a natural classification of skin diseases which should be of the utmost value to the student? He thought it most desirable that there be a classification of skin diseases according to their natural affinities. We could not assign at once all maladies to their proper place, but this was not requisite.

Sir William Savory gave an interesting address on Thursday evening to the members of the North London Medical and Chirurgical Society, on "Symptoms in Perspective." Each of the symptoms in a given case, he said, was to be regarded not so much in its absolute value as in its relative significance. The true meaning of a particular sign was only to be reached by considering it in relation to the rest. No doubt a single symptom might have a value which outweighed all the others. What the rules of perspective were to the artist the sound knowledge of the relative proportion of symptoms was in surgical diagnosis. He quoted numerous illustrations of the relative value of symptoms. In cases of calculus of the bladder the frequent presence of blood in the urine, he said, had a much higher diagnostic value than abnormal frequency of micturition. In the diagnosis of fracture of neck of the femur shortening was of more importance than eversion, and as evidence of acute inflammation rise of temperature was far more trustworthy than pain. Everyone knew, too, that the diagnosis of a case usually depended on an assemblage of symptoms, no one of which might be in itself strong, but which in conjunction with others might mean much. For example, neither a rigor nor an attack of sweating, nor a rise of temperature, by itself or in association with certain other symptoms, might be significant of septicæmia, but a rigor followed by profuse sweating and associated with a high temperature, occurring for the first time at a certain period after the infliction of a wound, was indeed very strong evidence of the occurrence of blood-poisoning.

The surgeon stood on firm ground in the presence of objective symptoms, but if so assured he came to neglect the subjective ones he might be led into serious error. In illustration of this Sir William Savory related the case of a man who had suffered from gout in the form of phlebitis and in other ways, and who gradually became jaundiced, while a tumor, which everyone recognized as a distended gall-bladder, presented itself. Weakness and emaciation increased but his chief complaint was of constant, dull, but severe pain in the back. The case seemed tolerably clear to most who saw it, and more than once it was proposed to open the gall-bladder. The patient died without an operation and advanced malignant disease of the pancreas was found; no disease of the liver was present, and only a few calculi in the gall-bladder, none of which were impacted. The objective symptoms were so marked that they and the persistent pain in the back were referred to a common cause which was believed to be confined to the region of the liver.

The first meetings of the Clinical and Pathological Societies have also just been held. At the former society, Mr. W. H. Brown, of Leeds, read notes of a case of intestinal obstruction, ending fatally, from gangrene of the lower limbs; after death, a thrombus was found in the abdominal aorta, plugging that vessel and extending down the iliac vessels. Mr. Arbuthnot Lane related a case of extensive nævus of the peritoneum in a boy of seven, which was successfully removed by operation. At the Pathological Society, Mr. Hurry Fenwick showed two female patients suffering from myxœdema, in whom injections of fresh thyroid juice had been followed by improvement.

INTESTINAL SUTURES.

To the Editor of the Medical Record.

Sir: In the Medical Record for September 17, 1892, I noticed an article on a new method of circular enterorrhaphy by Dr. M. E. Connell, of Milwaukee, Wis. I have experimented on over two hundred and twenty-five dogs for the purpose of trying all kinds of sutures and plates in intestinal operations. The form of suture which Dr. Connell reports, I have used in fact many times. But I never used it as a single continuous suture all around the circumference of the gut without interruption by tying. I would run the suture continuous for three to five stitches, and then tie. I have several times used the Lembert suture continuous around the gut, and tied it where it originally started.

But my results were not so good, for the reason that the suture always fell into the gut-lumen, and the threads act as distinct paths to conduct infection into the peritoneal cavity. The suture will slowly and gradually come away, and all the time it is falling into the gut-lumen a part of the suture is dangling into the fecal current, where innumerable vegetable germs live and thrive. More than once, in autopsies on dogs, I have seen where these sutures are fastened to the gut-wall and dangling in the fecal current, making a distinct invasion into the gut-wall. This hole in the gut-wall was distinctly made by infection travelling along the suture. In such cases many times only the graft saved the dog's life. It threw out an exudate as the infection advanced, and the exudate from gut and graft frequently succeeded in stopping the gut-hole. Again, the suture is dangerous by capillary attraction, for where fluids can travel germs can likely go. But if the suture were interrupted every three to five stitches and tied, I found it acted in a safer manner. In a continuous suture all around the gut there is danger of some of the stitches becoming loose or too slack by doubling of the gut-wall or contractions of the muscles in the wall through peristalsis. An accidental passage of hard fæces might loosen one or two sutures by irregular pressure. Again, to stitch the two ends of the gut as Dr. Connell does, with a continuous suture, has in my experiments invited the formation of fecal fistulæ. So I always strengthened such sutures with a Lembert which was continuous for three to five and then tied. The sutures in "plates," it is true, penetrate the whole gut-wall, but fecal fistula does not follow, because the plates hold in continuous and fixed coaptation the serous surfaces of the gut, and a fistula is almost impossible on account of the accompanying exudate encapsulating the invading wound. But I found, if I did not use more than the form of suture recommended by Dr. Connell, that danger followed more frequently than when I used the addition of a few Lembert sutures.

The method I follow now to do a circular enterorrhaphy (excluding the stove-pipe and invagination [without sutures] operations), is to entirely sever the gut and introduce a rubber tube four to six inches long into the proximal end of the gut. The rubber tube must be much smaller than the gut-lumen. It would be better to introduce more than one rubber tube in a gut with a large lumen. The tube is sewed to the proximal end of the

gut, so as to retain it for four to six days in a fixed position. The object of the rubber tube is to prevent invagination subsequent to operation. The invagination may occur months after the operation. I lost four per cent. from this cause. Three-fourths of the tube should project into the proximal gut, and the remainder of the rubber tube is thrust into the distal gut. I now unite the circumferences of the distal and proximal bowels by a "baseball suture," *i.e.*, a continuous suture all around the gut which penetrates the entire intestinal coat (mucous membrane, muscular wall, and peritoneum). This suture unites the tightest and closest with the least employment of gut-wall to invert and evert. The inversion or eversion of the gut circumference is what aids in producing stenosis of the gut-lumen. I now use Lembert sutures which are interrupted every three to five stitches and tied. Scarification and a graft (severed or unsevered from the omentum) completes the operation. I am continually operating on dogs' intestines in giving courses to practitioners, and we make careful autopsies on the dogs which die, and also those which we kill after the operation to observe the results; and so far as I can judge, the safe suture in intestinal surgery, in circular enterorrhaphy, is first, the Czerny suture. This suture should penetrate the whole gut-wall, and it is best done in the form of the "baseball" suture. This suture prevents immediate leakage of the fecal contents.

The second safe and reliable suture is the Lembert suture, which can be made continuous for three to five stitches, and then interrupted and tied. Wholly continuous sutures around the entire gut circumferences invite fecal fistula, and set up the dreaded triumvirate of abdominal surgery—pain, tympanites, and vomiting. I congratulate Dr. Connell on his new method of experimenting, and hope it will prove better in other hands than it has in mine.

Respectfully,

FRED. BYRON ROBINSON, M.D.

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Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending October 29, 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	39	14
Scarlet fever	55	7
Cerebro-spinal meningitis	1	1
Measles	32	4
Diphtheria	82	20
Small-pox	19	2
Cholera	0	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0

The Offspring of Mulattoes.—Observations extending over a period of thirty years concerning the morbid proclivities of mulattoes are embodied in a paper by Dr. W. A. Dixon, in the *Medical News*, August 13, 1892. Living close to the boundary separating the old slave States from free States, the author has had peculiar facilities for studying his subject at length. Fifty years ago and more, it was the custom of wealthy planters, as they advanced toward age, to liberate such portions of their "estate" that bore to them a filial relationship, and establish these in homes in localities where good treatment, consideration, and respect due to citizens could be secured. Thus in Southern Ohio there grew up a community of mulattoes, the offspring of white men of wealth and position, who themselves represented the best New England stock. These pure mulattoes were tall, muscular, well-developed, complete types of physical perfection, many living to old age, sometimes to one hundred years. Proud of their parentage and light skin, they took for wives women who were also half white. Prosperity and pride held them aloof from the negroes. Their children intermarried, and their race continued until the fourth generation, when these families gradually became extinct. The offspring of the first cross were robust; those of the second paler, more ash-like in complexion, slight in figure, evincing predisposition to, and characteristics of, tubercular disease; while in the second and third generations of pure mulatto intermixture all the children were girls and notably sterile. The fourth generation proved even less fertile, and presented cutaneous affections, ophthalmia, rachitis, hydrocephalus, hip and knee-joint disease, and various glandular abnormities.

These facts would seem to prove the affirmation of ethnologists, that human hybridity cannot be maintained without reversion or fresh supply from parent blood. Such a type can only have an ephemeral existence. In the second and third generation of pure mulatto blood the offspring were inferior in vitality and intelligence, and consequent morality. Their churches, independent school-houses, their very names, in time, disappeared. Some form of tuberculosis gradually undermined and extinguished them. The statement is made that when purity of race is maintained in civilized or barbarous countries, there is but little or no tuberculosis. And the dismal suggestion of ethnologists, cited by Broca, is given in full, to make us shudder or pause, according to temperament, to wit, "that the United States, where the Anglo-Saxon race is still predominant, but which is overrun by immigrants of various other races, is by that very circumstance threatened with decay, inasmuch as their continuous immigration may have the effect of producing a hybrid race containing the germ of disease, degeneration, and future sterility." The writer of the paper forcibly remarks that it is wise as well as necessary to look beyond the bacillus for causes resulting in tuberculosis, crime, idiocy, and insanity. Purity of race is one safeguard against constitutional inferiority that brings with it lessened mental and moral vigor.

Miss Kilmansegg and Her Aluminium Leg.—An exchange says that aluminium is to be used in the construction of artificial limbs, a use to which it seems to be particularly well adapted, owing to its great strength and lightness.

Tooth Culture.—In an address on "Tooth Culture," delivered at the annual meeting of the Eastern Counties Branch of the British Dental Association, Sir James Crichton-Browne referred to a change which has taken place in bread as one of the causes of the increase of dental caries. So far as our own country is concerned, this is essentially an age of white bread and fine flour, and it is an age, therefore, in which we are no longer partaking, to anything like the same amount that our ancestors did, of the bran or husky parts of wheat, and so are deprived to a large degree of a chemical element which they contain—namely, fluorine. The late Dr. George Wilson showed that fluorine is more widely distributed in nature than was before his time supposed; but still, as he pointed out, it is but sparingly present where it does occur, and the only channels by which it can apparently find its way into the animal economy are through the siliceous stems of grasses and the outer husks of grain, in which it exists in comparative abundance. Analysis has proved that the enamel of the teeth contains more fluorine, in the form of fluoride of calcium, than any other part of the body, and fluorine might, indeed, be regarded as the characteristic chemical constituent of this structure, the hardest of all animal tissue, and containing 95.5 per cent. of salts, against 72 per cent. in the dentine. As this is so, it is clear that a supply of fluorine, while the development of the teeth is proceeding, is essential to the proper formation of the enamel, and that any deficiency

in this respect must result in thin and inferior enamel. Sir James Crichton-Browne thinks it well worthy of consideration whether the reintroduction into our diet of a supply of fluorine in some suitable natural form—and what form, he asks, can be more suitable than that in which it exists in the pellicles of our grain stuffs?—might not do something to fortify the teeth of the next generation.—*Dental Register.*

A New Pasteur Institute.—The Mayor recently laid the corner-stone of the New York Bacteriological Institute which Dr. Gibier is building at Ninety-seventh Street and Central Park West. The building will be 26 x 95 feet, and five stories high, with a basement. It is hoped to have it completed by next January. The free treatment of persons suffering from rabies will be continued in the new institute, although it is from the treatment of private patients that the expenses of the bacteriological department will be met.

Insuring Against a Sudden Increase in the Family.—A company has recently been organized in London, the ostensible object of which is to insure married people against twins and triplets. A married man expecting to become a father must deposit £5 to become a policy-holder. In case the policy-holder's wife has twins he will receive £50; in case she has triplets, £75. The company is called the "Provident Bounty Association." It has issued a prospectus calling attention to its conditions of issuing policies, which it says are simple and are intended to appeal especially to the lower middle class, including young bookkeepers, shop clerks, and small tradesmen.

Something Like an Empty Honor.—The office of Surgeon to the Queen in Ireland has been offered to, and accepted by, Sir William Stokes. The vacancy was caused by the death of Mr. William Colles, and the appointment of Sir William Stokes has received hearty approval as being well merited. As, however, the Queen will never go to Ireland, Sir William is not likely to find his time much taken up with operations on Her Majesty.

The Eliminative Value of the Sweat in Infectious Diseases.—Brunner asserts that pathogenic microbes are in part eliminated by means of the sweat. His investigations to determine this point were met with the difficulty that it is not easy to sterilize the skin so as to be sure that the micro-organisms found in the secretion were derived from the tissues and fluids of the body, and not from its cutaneous surface. This obstacle was, however, overcome by using animals which had been inoculated with disease, the pathogenic organism of which could not accidentally have been lodged on the skin. The animal was then made to perspire profusely, and further inoculation and cultivation experiments were made with the sweat. A culture of staphylococcus aureus was injected into a hog, one of anthrax into a cat, and one of micrococcus prodigiosus into a sucking-pig. In all three cases the microbes injected were found in the sweat, and also in the saliva. This property of the perspiration, if it be a constant one, would give to crises, accompanied by profuse perspirations, a more important place than they have hitherto held. It would also show that there may be great danger in allowing a patient who has been sweating profusely to reabsorb the secretion.

The Painlessness of Death.—A writer in the *Pall Mall Gazette* has given an account of his sensations while dying. He fell under the ice while skating, and when brought out by some others who had seen him disappear, was seemingly dead, and was resuscitated with great difficulty. In describing his sensations while dying, he says: "I gasped and swallowed a great deal of water. I felt my lungs filling. A moment of suspense, during which I knew perfectly well I was drowning, intervened; and then—I died. I was drowned and dead. Just before I died, however, I noticed—deliberately noticed, for I am pyschological by nature—that my whole past life did not come up, as I had been given to understand it would, in a single flash before me. . . . The knowledge that I have thus once experienced in my own person exactly what death is, and tried it fully, has had a great deal to do, I think, with my utter physical indifference to it. I know how it feels, and, though it is momentarily uncomfortable, it isn't half so bad as breaking your arm or having a tooth drawn. In fact, the actual dying itself, as dying, is quite painless; as painless as falling asleep."

Cremation in England.—The conversion to cremation as a form of sepulture in this country is slow, although progress appears to be being made. According to the latest report, in 1885, when the Woking Crematorium was instituted, only three bodies were sent, in 1886 ten, in 1887 thirteen, in 1888 twenty-eight, in 1889 forty-six, in 1890 fifty, and in 1891 ninety-nine. Thus every year has shown a slow but steady progress. The charge at Woking is five guineas, including the services of an attendant, use of chapel and waiting-room, and an urn for the preservation of the ashes. The railway company's charges are an extra, and the local clergyman's fee is a guinea if the burial party does not provide its own cleric. The ashes can be either buried in the grounds at a fee of one guinea, or preserved in the chapel of the crematorium, or they may be taken away. Two medical certificates are required to show cause of death, and one, at least, of the doctors giving such a certificate, must have attended the deceased in the usual manner; it must also be stated that the deceased has expressed no wish contrary to the carrying out of this form of burial. It usually takes about an hour and a half to cremate the body, and the process must be performed three days after death took place in London, or four days in the country.—London Correspondence of the *American Practitioner and News.*

Remarkable Condescension on the Part of Royalty.—The *Hospital* gravely announces that "Her Majesty has graciously consented to accept the right of placing a child in the Merchant Seamen's Orphan Asylum, Snaresbrook, and has intimated that it may be known as 'The Queen's Presentation.'"

BOOKS RECEIVED.

GENITO-URINARY AND VENEREAL DISEASES. By Charles H. Chetwood, M.D. 12mo, 178 pages, illustrated. Lea Brothers & Co., Philadelphia, Pa.

OBSTETRICS. By Charles W. Hoyt, M.D. 12mo, 190 pages, illustrated. Lea Brothers & Co., Philadelphia, Pa.

A MANUAL OF ORGANIC MATERIA MEDICA. By John M. Maisch, Ph.M. Fifth Edition. 8vo, 556 pages, illustrated. Lea Brothers & Co., Philadelphia, Pa.

MATERIA MEDICA AND THERAPEUTICS. By L. F. Warner, M.D. 12mo, 223 pages. Lea Brothers & Co., Philadelphia, Pa.

THE PRINCIPLES OF THEORETICAL CHEMISTRY. By Ira Pemsen. Fourth Edition. 8vo, 322 pages. Lea Brothers & Co., Philadelphia, Pa.

INOCULATION A PREVENTIVE OF SWINE PLAGUE. By Frank S. Billings, M.D. 8vo, 321 pages.

PHARMACEUTICAL AND CHEMICAL PROBLEMS AND EXERCISES. By Oscar Oldberg, Ph.D. 8vo, 176 pages.

A DICTIONARY OF TERMS USED IN MEDICINE. By Richard D. Hoblyn, M.D. Twelfth Edition. 12mo, 822 pages. Macmillan & Co., New York.

REST AND PAIN. By John Hilton. Fifth Edition. 12mo, 514 pages, illustrated. Macmillan & Co., New York.

AN ILLUSTRATED ENCYCLOPÆDIC MEDICAL DICTIONARY. By Frank P. Foster, M.D. Vol. III. 4to, pages 1545 to 2320. D. Appleton & Co., New York.

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Original Articles.

SOME PRACTICAL POINTS IN THE DIAGNOSIS OF SPINAL-CORD LESIONS.

By FREDERICK PETERSON, M.D.,

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THE spinal cord, while it is a sort of cable carrying messages to and fro between the brain and the periphery, is at the same time to be regarded as a series of thirty-one segments, piled one upon the other, each segment connected with a pair of spinal nerves, and each being a trophic, reflex, and vaso-motor centre. These thirty one segments occupy only seventeen or eighteen inches of the spinal canal, which is twenty-six to twenty-eight inches long. Hence, while the first segment of the cord is at the foramen magnum, the thirty-first (or conus) is found opposite the base of the first lumbar vertebra. If one takes a cosmetic pencil it is very easy to draw, on a thin person, an outline of the spinal cord upon the back over the vertebral column, and in this way one gains a clearer knowledge of these puzzling relations than by any amount of reading. The eighth cervical and first dorsal segments are just in front of the spine of the seventh vertebra.

The lumbo-sacral enlargement of the cord begins immediately in front of the tip of the spine of the tenth dorsal vertebra; the conus is just in front of the lower point of the first lumbar spine. Below this point the canal is filled with the cauda equina (lumbar and sacral nerves).

The most important parts of the spinal cord, from a pathological point of view, are the cervical and lumbar portions, or enlargements, for there is an intumescence of the cord in each of these regions, due to the fact that the sensory, motor, and trophic centres for the arms and hands are in the one, and those for the legs (as well as the reflex centres for the bladder, rectum, and sexual organs) in the other.

The cord consists of "columns" of white matter surrounding the H-shaped central gray. The "columns," or tracts, contain the long fibres, which transmit peripheral and central impresses and are variously named, as in the diagram (see Fig. 1). The reflex, trophic, and vaso-motor centres are wholly in the gray matter of the cord. The spinal-cord should be regarded, moreover, as consisting of two symmetrical halves, like the brain, with sensory fibres decussating the whole length of the cord, and fibres uniting anterior columns and anterior horns of opposite sides.

There are diseases which attack certain columns, or certain parts of the gray matter, and these are termed system-diseases. The pathological processes are localized in the parts figured in Fig. 2. These "system-diseases," such as polio-myelitis, progressive muscular atrophy, amytrophic lateral sclerosis, lateral sclerosis, ataxic paraplegia, and locomotor ataxia, are readily recognized by the peculiar symptoms brought about by injury to certain systems of fibres or cells. This localization is quickly seen in the pathological picture presented above.

But the so-called "focal" diseases of the spinal cord, lesions of limited extent in a particular segment or segments due to tumors, pressure, hemorrhages, inflammations, spinal injuries, and the like, are not so readily localized, for the symptoms—reflex, trophic, sensory, and motor—are extremely variable, depending as they do upon the segment-level of the pathological process. As regards reflexes, those of the rectum and bladder are abolished by lesion in the fourth and fifth sacral segments and the conus of the cord; ankle-clonus in the fifth lumbar; the knee-jerk in the third lumbar; the wrist and elbow-jerk in the sixth cervical, and so on.

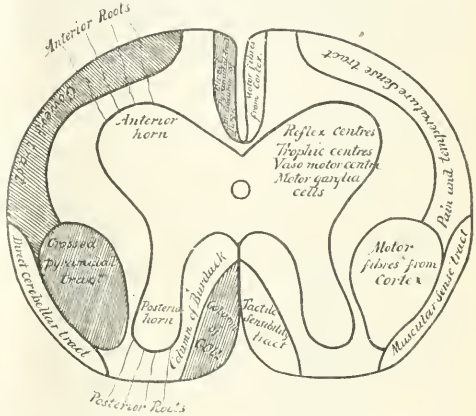

FIG. 1.—Diagram of Transverse Section of the Cord, showing Anatomical Topography on the Left, and Physiological Functions on the Right Side.

Motor and trophic disorders are also distributed in the same manner, segmentally: so that, for instance, muscles of the toes are represented in the first and second sacral segments, of knee flexors in the fourth and fifth lumbar, thigh muscles in the second and third lumbar, abdominal and spinal muscles in the second to twelfth dorsal, thumb

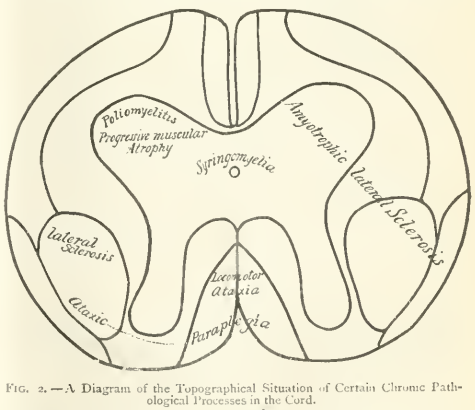

FIG. 2.—A Diagram of the Topographical Situation of Certain Chronic Pathological Processes in the Cord.

and fingers in the eight cervical and first dorsal, forearm in the sixth and seventh cervical, shoulder in the fourth and fifth, neck in the second and third—and so on, this representation being in regular order "lowest muscles in the lowest segments." The sensory distribution is also segmental, but has peculiarities of great diagnostic value. Thus

anæsthesia of the perineum, scrotum, rectum, vagina, and posterior surface of penis is produced by a lesion in the lowest part of the spinal cord, viz., in the fourth and fifth sacral segments and conus. If the lesion is higher, say at the third sacral segment, the anæsthesia extends farther out on the buttocks and down the backs of the thighs—over the parts, in fact, which touch a saddle in riding (so-called "saddle-shaped" area). If the lesion be at the fifth lumbar, the anæsthesia includes the outer sides of both legs, and even the outer edges of the feet at times. Now, in order to render all of these facts much clearer than could be accomplished by mere description, I have made two drawings of the most important parts of the spinal cord, from a localization point of view, founded upon the excellent clinical papers of Starr, Herter, Thorburn, and Mills. These parts are the cervical (Fig. 3) and lumbar (Fig. 4) enlargements, and upon the segments are mapped out (in large type vertically) the reflex centres; the names of muscles are written in their proper segments and the areas of anæsthesia, according to the seat of any

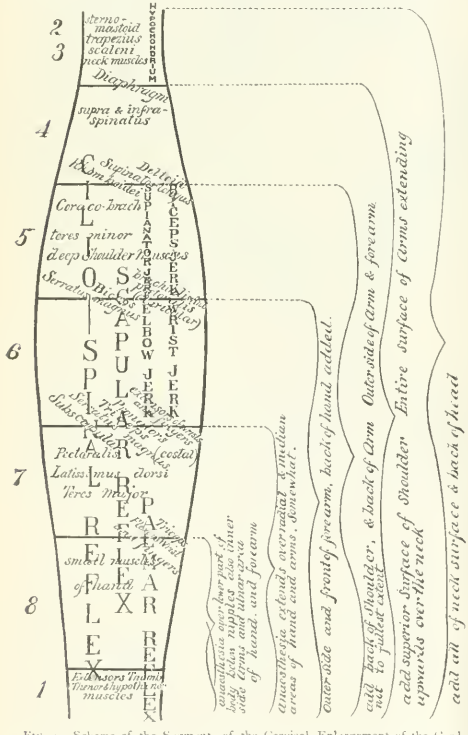

Fig. 3.—Scheme of the Segments of the Cervical Enlargement of the Cord, showing the Reflex Centres, Segmental Representation of Muscles, and, to the Right, the Extent of Anæsthesia produced by Destructive Lesion at Various Levels.

transverse lesion, are shown at the side. I have found these pictures very valuable for reference and to help the memory, and I trust they will be lucid and helpful to students and general practitioners for whose benefit they are published. In lumbo sacral localization there are two important diagnostic points which we owe to Starr, viz.: 1. In hysterical anæsthesia the anus, genitals, and perineum remain sensitive. 2. Cauda lesions high up are distinguished from destructive lumbo-sacral lesions by comparatively extensive paralyses when sensation is but slightly affected.

There are chronic lesions in the central gray matter of the cord, such as syringo-myelia, which produce peculiar symptoms according to the segmental level of the lesion. Encroaching on the gray matter of the anterior horns, of course, the particular muscles of that segment are paralyzed and atrophied, and lose their reflex excitability. Encroaching around the central canal and toward the posterior horns, a peculiar anæsthesia is produced to pain and temperature, distributed, of course, according to the particular representations of skin area at the level of the

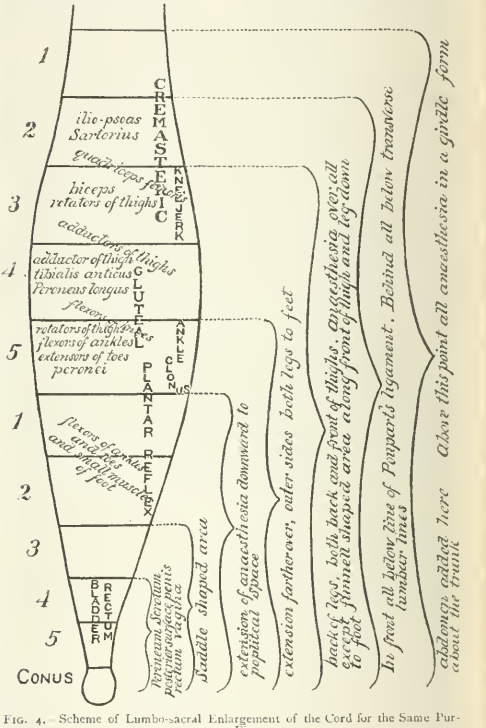

Fig. 4.—Scheme of Lumbo-sacral Enlargement of the Cord for the Same Purpose as Fig. 3.

lesion. This is because the fibres for pain and temperature sensibility lie in the central gray matter before entering their tract on the periphery of the cord (see Fig. 1) to reach the brain.

Lesions of the motor tracts in the white matter of the lateral and anterior columns produce muscular weakness, or paresis, but without atrophy. This paralysis is naturally much more widespread than the paralysis caused by injury to the anterior horn. For instance, a very small lesion, say the size of a pea, in a lateral column will probably affect all of the muscles on the same side below that point, the lateral tract being the cable containing nearly all of the long fibres of communication between one side of the body and one-half of the brain. On the other hand, the same lesion in an anterior horn would produce a very restricted paralysis, affecting only the muscles innervated from that particular segment.

Another feature peculiar to paresis from lateral-column injuries is the spastic rigidity with exaggerated tendon reflexes; and still another important point for differential diagnosis is the loss of faradic reaction in paralysis, due to lesion in the anterior horn or motor nerve, and the perfectly normal reaction of these muscles to faradism when the paralysis is due to lesion in the long fibres running from the cortex down the lateral and anterior columns to terminate in the large cells of the anterior horns.

Hence there are four absolutely opposite clinical conditions or symptoms which will serve to differentiate for

us the two distinct types of spinal paralysis, the atrophic and the spastic; and these may be conveniently grouped as follows:

Atrophic Spinal Paralysis.	*Spastic Spinal Paralysis.*
1. Atrophy.	1. No atrophy.
2. Lost reflexes (such as knee-jerk, wrist-jerk, elbow-jerk, etc.).	2. Exaggerated reflexes.
3. Flabby relaxed muscles.	3. Rigid muscles.
4. No contraction to faradism. Lesion in the anterior horns.	4. Contraction to faradism. Lesion in the lateral columns.

This calls to mind the importance of a complete understanding of the knee-jerk by the general practitioner.

It is of the highest value among the reflex symptoms. The tap upon the tendon sends a sensory impulse to the reflex centre in the anterior horn of the third lumbar segment (*via*, the sensory nerve from the knee-area and posterior root and posterior horn), whence an impulse is reflected outward (*via* anterior root and motor nerve) to contract the quadriceps extensor. While the knee-jerk is, in truth, not a perfect representation of an actual reflex, yet for all practical purposes it may be so considered. Now, certain fibres from the cortex pass down by way of the lateral columns of the cord to enter the anterior horns, and these hold a rein upon the reflexes, so to say. They inhibit the jerk. Thus, under normal conditions, the knee-jerk is very moderate. If this inhibitory fibre is functionally impaired or destroyed the knee-jerk is no longer restrained but becomes exaggerated. If any part of the reflex arc is destroyed (sensory nerve, posterior

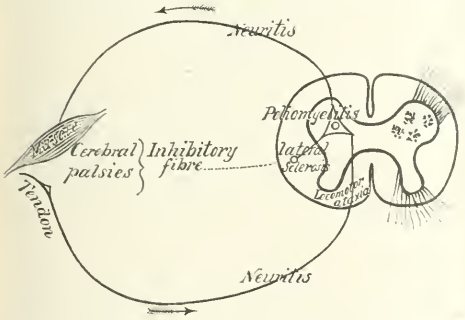

Fig. 5.—Diagram, showing Reflex Arc and Inhibitory Fibre, and some of the Diseases which Exaggerate or Destroy the Knee-jerk.

nerve-roots, posterior root-zone, posterior horn, anterior horn, or motor nerve) the knee-jerk is lost. Thus cerebral palsies, lateral sclerosis exaggerate the knee-jerk; whereas neuritis, locomotor ataxia, polio-myelitis, and the like, destroy the knee-jerk. Fig. 5 is offered as a diagrammatic illustration of these points.

In lesions affecting the inhibitory fibres anywhere all the tendon reflexes below the lesions become exaggerated. Thus ankle-clonus, not normally present in anybody, develops where the lateral column is affected above its centre in the fifth lumbar segment.

A unilateral lesion of the spinal cord gives rise to an interesting syndrome, generally termed Brown-Séquard's paralysis. Suppose that one lateral half of a segment of the mid-dorsal region were destroyed, the result, seen in a typical case some time after the injury, would be:

Same Side.	*Opposite Side.*
1. Atrophic paralysis of muscles innervated by that particular half-segment.	1. Loss of pain, temperature, and touch-sense below the lesion
2. Spastic paralysis of the leg.	
3. Lost or impaired muscular sense.	
4. Exaggerated knee-jerk, and usually ankle-clonus.	
5. At about the level of the lesion a half-girdle of hyperalgesia, and just below this a parallel zone of anæsthesia.	

The wrist-jerk, under normal conditions rarely present, or just perceptible, becomes very excessive in lesions of the cerebro-spinal segment of the motor tract above its special centre in the sixth cervical segment.

In the earliest stage of an acute unilateral lesion the knee-jerk may be absent for a short time, which is also true of both knee-jerks in any complete transverse lesion of the cord above the third lumbar segment, but subsequently it takes on its over-active character.

The reason that muscular sense is impaired on the same side is that the fibres for muscular sense do not decussate along the spinal cord as do the other sensory fibres.

TRAUMATIC INJURIES TO THE EYE.[1]

By G. H. COCKS, M.D.,

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Mr. President and Members of the Harlem Medical Association: The title of my paper, "Traumatic Injuries to the Eye," includes injury to the conjunctiva, cornea, sclera, iris, lens, etc. If one receives a blow upon the eye from a stick of wood, the fist of an antagonist, chips from steel or stone, the injury inflicted will depend upon the size of the object, and the force with which it is propelled.

Commencing from without, we first meet with injury to the conjunctiva. This membrane is very tolerant of other than chemical injuries and may be incised in operations, or extensively lacerated, without danger of serious consequences. Should the wound be extensive, it can be closed with fine sutures, but even this is not always necessary.

After operations for pterygium or the removal of small tumors the parts can be left to heal, but the final result is better if the conjunctiva is loosened from the eyeball on each side of the wound and the edges brought together with fine sutures. If, however, the injury is produced by lime, strong acids, or burns of any kind, the contiguous portions of palpebral and ocular conjunctiva are most likely to unite and severe deformity result. A case of mine, hod carrier by trade, had some lime strike the eye between the cornea and inner canthus. I did not see him until several weeks after the accident. At that time he was greatly annoyed, as he could not see well to walk the beams. The scar resulting from the burn had drawn the pupil so far inward that he could not carry it outward, even to the median line. On this account he could not calculate the distance of objects to the outer side of him, and was very apt to fall between the beams while at his work. I removed the cicatrix, and by loosening the conjunctiva and bringing in a flap he was able, after the wound had healed, to carry the pupil a little to the outer side of the median line.

It is found necessary, quite often, in these cases, to insert conjunctiva from a rabbit's eye, to take the place of the cicatricial conjunctiva. I have seen Dr. H. D. Noyes operate in this manner several times. The operation is by no means a simple one, but the result is often quite gratifying.

Wounds of the conjunctiva from small particles, such as cinders from the elevated roads or small fragments of wood, often produced serious trouble.

If a patient comes to you complaining of a scratching sensation in the eye, especially if it has come on suddenly, do not dismiss him until you have made a thorough examination of the under surface of each lid, as well as in the cul-de-sac of the upper lid. On everting the upper lid you are very apt to find the offending particle there. If you do not find it, have him look downward as far as he can. This act will expose the conjunctiva of the cul-de-sac, and sometimes the foreign body.

One of the members of the New York Ophthalmological Society mentioned a case, several years ago, of a

[1] Read before the Harlem Medical Association, February 3, 1892.

young man who complained of something irritating his eye. He had been to several physicians, but had not received any satisfactory relief. The narrator, not finding any trouble of the lids to account for the suffering had the patient look as far downward as possible. He did as directed, and the surgeon was much pleased to see a small shot dislodged from its hiding-place in the cul-de-sac.

A lady patient came to me about ten days after her right eye first became inflamed. The lids were swollen, and an apparent catarrhal inflammation was in progress. The inflammation, to my surprise, did not yield readily to the usual treatment. Two weeks later the patient brought a very small splinter of wood to my office. She said the night before, while bathing the eye, she felt a sharp pain, and while she continued to bathe the eye this small piece of wood had come out. She then recalled that several days previous to her eye becoming inflamed there was smoke in the room; opening the oven door, a gust of smoke blew into her face. The husband had placed some damp wood in the oven without informing his wife. The wood became charred, and this small piece had been driven under the lid by the force of the escaping smoke, and lodged in the cul-de-sac.

Gunpowder appears to be remarkably non-irritating to the conjunctiva. After the inflammation resulting from the explosion *per se* has subsided the grains of powder will remain for years without causing inflammation. They are removed most frequently for cosmetic purposes. The grain of powder is seized with a mouse toothed forceps and is removed with the conjunctiva in which it is embedded. This leaves a small wound which usually heals very kindly.

In contused wounds we quite frequently find a large subconjunctival hemorrhage. When such a case presents itself we take his vision, and if it is not as good as the uninjured eye an ophthalmoscopic examination should be made to determine whether any deeper tunic, or the vitreous or lens is involved. If the vision is good we can calm the patient's fears by informing him that no serious injury has been produced and that in from one to five weeks his eye will be all right.

The Sclera.—This is not so frequently injured as the cornea, as its firm structure gives it great resisting power. When, however, the sclera is injured the traumatism which produced it is usually so severe that we have very little hopes of preserving useful vision. The complications which may exist are in great measure dependent on the force of the blow and the extent to which iris, lens, or vitreous have been injured at the time of the accident.

Simple incised wounds, in which none of the underlying structures are involved, heal kindly. Sometimes it is necessary to unite the edges with a suture. Care should be exercised so as not to pass the suture entirely through, but just far enough to get a bite.

In punctured wounds the vitreous not infrequently escapes through the wound. If the wound is not large, the "bead" of vitreous should be cut off with a pair of sharp curved scissors. The eye should be thoroughly washed and a light bandage applied. The patient should then be put to bed and the eye watched carefully. If the instrument which produced the puncture can be removed the prognosis is much better than if produced by a shot or small object that cannot be extracted.

Rupture of the sclera may be produced by the cork from a champagne or soda-water bottle, sticks, toy-arrows, by the fist of an antagonist, a missile thrown by another, etc.

I have now under my care a man, aged forty, who, while walking in the street, was struck just below the lower lid of the right eye with a stone. The injury consisted of a lacerated wound just below the lid and a complete rupture of the sclera upward and inward. I saw him about three hours after the injury. On opening the lids I found the lens lying between them. All the vitreous had escaped, leaving the eye a shrunken mass.

Prognosis in rupture of the sclera is not always bad. Dr. H. D. Noyes mentions a case where the rupture occurred in such a position that the iris was removed *in toto* without disturbing the lens.

A wound in the region where the union of sclera and cornea occurs almost always involves the ciliary region. This is a most unfortunate accident, as very slight injury to this part is so frequently followed by disastrous results. If the wound be so severe that the underlying tissues protrude, they should be cut off, the wound cleaned of all foreign substances, and, if not too extensive, the edges can be brought together with sutures. Strict antisepsis should be followed in treating all wounds of the globe.

I have the pleasure of presenting, for the benefit of the members, a patient who received a severe injury to both eyes by the explosion of a disconnected gas-meter. The patient was examining the number of the meter as it stood on the floor alongside of several others that had been removed the same day. He struck a match, and as he brought it close to the face of the meter an explosion occurred. His face was bleeding from many small wounds when he walked into my office a short time after the accident. I removed many small pieces and one large piece of glass from face and forehead. Examining the eyes I found a wound at the sclera corneal margin inward in the right eye. I examined closely but could detect no glass in the wound. The cornea of left eye was injured in several places. Downward and inward there appeared to be a perforating wound. On using the ophthalmoscope, I found a very slight opacity of lens.

I mention this case at this time to call attention more particularly to the injury to the right eye. As the inflammatory swelling subsided a piece of glass was seen imbedded in the iris, its edge just beneath the cornea.

January 1, 1891.—Fifteen days after the injury the V. in O. D. was $\frac{1}{2}\frac{7}{0}$; in O. S. $= \frac{1}{4}\frac{5}{0}$.

The question arose whether to remove the foreign body, or "let well enough alone." I asked the advice of two of the surgeons at the New York Eye and Ear Infirmary, and they both decided it was best to wait, especially as he lived in the city and could seek medical aid early if trouble should arise. He has called on me about once a month since the accident. I have examined and find very little change since the subsidence of the inflammation.

The Cornea.—This is so prominent that it is frequently the recipient of slight as well as severe traumatism. Its clearness and regular curvature are so important to perfect vision that even slight traumatism may produce severe impairment of vision.

In New York City the most common injury to the cornea is produced by cinders, sparks of steel, small particles from emery wheel, chips from stone and chisel. In the country and in farming districts the burr from grain often produces disastrous inflammation.

Not infrequently the mother receives an injury to the cornea while playing with the baby. In throwing its arms about, the finger-nail removes the epithelium from the cornea. The injury to the cornea is usually slight, but the pain is frequently intense. In these cases a few drops of the four per cent. solution of cocaine will relieve the pain. The eye should then be lightly bandaged to prevent the light striking the exposed and irritated cornea and the lids from rubbing against the wounds.

Cocaine has been a great boon to those unfortunates who have been injured by what we commonly call foreign bodies on the cornea. Previous to its discovery we found it necessary to place the patient's head against our breast, hold the eye steady by pressing the index and middle fingers of the left hand against the globe, while the right hand was free to use the spud or needle. The pain produced, as any one who has had a cinder deeply imbedded in the cornea removed can testify, is very severe. It required not a little skill to remove quickly and thoroughly a small cinder in those days, but now that is changed. Under the influence of a four per cent. solution of cocaine the patient will permit prolonged manipulations without evincing any discomfort.

With this drug in the hands of the general practitioner it is not necessary to send every case of foreign body on the cornea to the specialist for removal. This does not mean that the eye will stand any more abuse while under the influence of cocaine than it did before; but that under its influence the patient will allow you to work directly on the spot of impingement instead of all sides of it, as not infrequently happened before the use of cocaine.

In the case of cinders it becomes necessary not only to remove them but the scale produced by their contact with the cornea.

At the New York Eye and Ear Infirmary I have seen not a few cases where the foreign body in the cornea has been removed by the "expert" at the shop or factory, but the scale has been left. This is just as irritating as the body itself, and *is* a foreign body. To remove it a sharp needle is often required. So far I have referred only to those cases where the foreign body in the cornea is in the superficial layers of the cornea. Where the foreign body has passed nearly through the cornea, just short of perforation, its removal is no easy matter. In these cases it sometimes becomes necessary to introduce a long narrow-bladed knife into the anterior chamber and press the body forward while it is seized in front with a pair of forceps.

The burrs from grain often produce severe damage when they strike the cornea. Occasionally they perforate the cornea. When this occurs severe inflammatory action is set up, the cornea becomes hazy at the site of perforation, and if not controlled an ulcer with hypopyon will be the result. In these cases, after the burr has been removed, hot boracic acid solution should be used, together with atropia, two grains to the ounce three times a day. If the hypopyon is not absorbed it then becomes necessary to open the anterior chamber and evacuate it. The hot-water treatment with atropia should be continued, and sustaining measures adopted.

To detect small and fine particles on the cornea a biconvex lens of about two inches focus is required. Dr. H. D. Noyes has an arrangement by which the lens is held on the index finger of the left hand. This permits one to focus the light better than the lens in the hands of an assistant. It also enables one to do without an assistant. With small and nervous children it sometimes becomes necessary to give chloroform, as the sight of an instrument produces such a nervous state that you cannot approach them. If you attempt to hold their eye by force they will jump at an unexpected movement and perhaps cause you to produce severe damage.

Incised and Perforating Wounds of the Cornea.—If the incision is produced by a perfectly clean knife, as in the extraction of cataract, all that is necessary is to apply a light bandage so that the lids do not move over the incision; the aqueous soon accumulates, the anterior chamber is re-established, and in a few days firm union has occurred. Where the wound has been produced by a non-aseptic instrument it then becomes necessary to thoroughly cleanse the eye with an antiseptic solution, such as boracic acid, free the edges from all extraneous substances, then close the lids, having previously instilled a few drops of atropine if the wound is central, or eserine if near the periphery of the cornea.

In those cases where the wound has perforated the cornea the aqueous escapes, allowing the iris to fall against or pass through the incision. If the wound is recent an attempt should be made to replace the iris, but if this is firmly bound it will be necessary to seize the iris and cut it off with a pair of curved scissors. If the wound is firmly united it is better to reopen it and perform iridectomy, as the constant tension upon the iris is prone to produce inflammation.

Iris.—This stands traumatic injuries remarkably, providing the instruments are aseptic. In the extraction of cataract, with iridectomy, the iris is withdrawn from the anterior chamber and a large piece removed, yet iritis of a severe kind very rarely follows. In extraction without iridectomy, which has been performed so much of late years, the iris is pressed upon by the lens as it escapes through the pupil, yet iritis is not a frequent sequence. Out of 109 cases operated on at the New York Eye and Ear Infirmary in 1889 only 34 had iritis follow, and this of a mild character.

Foreign bodies in the iris produce, in the great majority of cases, very severe inflammation. Occasionally, however, foreign bodies remain for many years implanted in the iris without causing destructive inflammation. Mr. D——, the patient mentioned before in this paper, has now a piece of glass in the iris of right eye that has caused but slight trouble since its lodgement there in December, 1890.

Dr. Noyes mentions a case where a piece of iron has remained innocuous for nineteen years. In the treatment of such a case we are governed by the character of the patient and his accessibility to good surgical help in case of trouble.

When a case of traumatism first presents itself, especially if immediately after the accident, it is not always easy to determine the presence of a foreign body on account of the hemorrhage that so frequently occurs in these cases. If they have waited several days, and remark, when asked why they did not come at once, "Oh, Doctor, I thought it would be nothing!" we often find the anterior chamber filled with blood, the tension of the eye increased if the chambers have been refilled with aqueous, and the patient suffering intense pain. We cannot see the foreign body on account of the hemorrhage and chemosis. It is necessary in these cases to employ antiphlogistic measures until the inflammation has subsided and then treat the condition found.

If the patient presents himself immediately after the accident, and the foreign body can be seen, it should be removed at once. If a few cases have carried a foreign body in their iris for years, the majority have not. We can offer no guarantee that the eye will remain quiet, but, on the other hand, can say that its presence is a constant menace, and with but slight provocation will set up an inflammation that may involve its fellow.

To remove a foreign body from the iris is not always easy. If the body be a piece of iron or steel, a strong magnet will sometimes remove it without the necessity of performing iridectomy. If, however, the bit of iron is caught in the tissue it will not yield to the magnet unless near it or in actual contact (Noyes). Dr. Gruening employs a cluster of permanently magnetized steel rods. I have seen this used with success, but in one case of my own I did not succeed.

For the purpose of removing the foreign body, or rather introducing forceps, the strength of which should correspond to the size of the foreign body and the existing adhesions, the original wound may sometimes be utilized, even though it be closed, and it may be opened again and enlarged according to the exigencies of the case. It is usually necessary to open the chamber by a new incision with a cataract or lance-shaped knife. Peripheral incisions extending into the scleral border are usually to be preferred, especially if the knife can thus be pushed partially or wholly behind the foreign body. It must not be forgotten, however, that prolapse of the iris follows more readily in such wounds, if they exceed one-quarter of the corneal circumference, and thus excision of the iris may become necessary on this account. In other cases a wound made in the centre of the cornea is better, or only adapted for the seizure and extraction of the foreign body. "Care should be taken in selecting the location, direction, and size of the incision, in order that the undisturbed foreign body may be seized most conveniently and firmly with the forceps, and that when the preservation of the iris, and especially the capsule of lens is concerned, the removal of the foreign body may be accomplished without much turning or twisting" (Arlt of Vienna).

Traumatic iritis may be produced by disease of the eye

itself, irrespective of outside influence. It may be produced by keratitis, cyclitis, and injuries and dislocation of the lens. Soft lens matter after extraction may cause it.

On January 14th I saw a case of dislocation into the anterior chamber. The lens had been there but a short time, yet iritis had developed. An operation for the removal of the lens was advised, but the patient did not appear at the time appointed.

After cataract extraction, especially without iridectomy, if the cornea fails to heal promptly and the iris protrudes through the corneal section, in this case it is generally necessary to perform iridectomy. In a recent case at the New York Eye and Ear Infirmary Dr. Dennet removed the lens of the left eye without iridectomy; the result was perfect. Three weeks later he operated on the right eye without iridectomy; but two days later the iris prolapsed and iridectomy was resorted to.

If soft lens matter is the cause of an iritis after extraction, it becomes necessary frequently to reopen the corneal incision and remove it.

In iridectomy, if the edge of the iris becomes incarcerated in the wound, iritis usually results. If the incarceration is extensive it must be relieved.

Traumatic cataract may be produced by an injury that does not injure the globe directly or cause laceration of the capsule, the snap of a whip-lash, cork forced from a bottle, or it may be produced by any object lacerating the capsule of the lens. Foreign bodies not infrequently penetrate the cornea and lodge in the lens or its capsule. Sometimes the patient suddenly moving while a paracentesis of the cornea is being performed the capsule may be injured and thus cause traumatic cataract. The result of the capsular lesion is to cause the lens to swell by the imbibition of the aqueous, transforming the transparent lens into a white or bluish white mass. If the wound of the capsule is large, soft lens matter exudes and is often thoroughly absorbed by the aqueous, leaving a clear pupil. If the lens swells too quickly and the aqueous does not accumulate, the lens falls forward, the iris is pressed upon, a severe iritis is set up, and sometimes irido-cyclitis of so severe a type that the eye is destroyed. Occasionally small particles have been caught in the capsule and have remained quiet, producing no further trouble than a slight opacity, for years.

Traumatic cataract develops within a few hours, or days, or weeks. It exhibits a great variety of conditions according to its cause. According to the degree to which the capsule has been lacerated will be the extent and rapidity of the swelling and the irritation of the eye.

I have now under my care an Italian who received a severe injury after an explosion of gunpowder. The left eye is the worse. Here we have a fairly good picture of the effect of such an injury. The cornea has numerous opacities, but the lens has been severely damaged. The iris is attached to the anterior capsule so firmly that nothing short of surgical interference will relieve it.

The treatment of these cases varies with the condition found. Sometimes the lens is entirely absorbed. If the foreign body is steel or iron the magnet introduced through the wound will sometimes remove it. We thus get rid of the cause, but not so readily the effect. The eye should be kept quiet and atropine used to prevent adhesions. If the lens becomes solid it may be removed, providing we feel that fair vision can be obtained.

We have now to consider those cases where more than one, or many of the parts of the globe are injured. If the globe is severely lacerated so that lens and vitreous have escaped, and the eyeball has collapsed, the quickest way to rapid recovery is enucleation or evisceration. It is wonderful, however, with what tenacity of purpose these cases will hold on to an eye that is positively destroyed. If a foreign body has penetrated the globe, many complications present themselves, and just what is best to do is not always easy to determine. The amount of injury already inflicted, the position and nature of the foreign body will help us greatly to decide what is best.

At the clinic, January 28, 1892, a young boy presented himself for treatment of a little scratch on the cornea. On asking him how it was produced he answered that while working with chisel and hammer on iron the previous day a small chip of iron struck him in the eye and fell out again.

I examined the eye by oblique illumination without atropine and saw a slight scratch on the cornea. The eye was but slightly injected and there was no pain. It appeared to be a very fortunate case. For fear something more might have happened than appeared at this examination I put a few drops of atropine in his eye and then with the ophthalmoscope a very pretty cataract was seen. The case then developed into a very interesting one. The question arose as to whether the foreign body was still in the eye. He was examined by a number of competent men. One felt very positive that he could see it imbedded in the sclera, but none of the others could find it.

Minute fragments of metal, as in this case, leave very slight trace of entrance, especially in the sclera. On examining the interior of the eye we can sometimes find them sticking in the lens, suspended in the vitreous, or imbedded in the sclera. If the object is larger much hemorrhage is apt to result, so that the ophthalmoscope is of no service. Bird-shot may enter and leave a slight wound behind. There was the case of a boy who received an injury from bird-shot thrown by a "bean-shooter" in the hands of a playmate. When the boy presented himself for treatment severe iritis had set in, and the ciliary region was so involved that enucleation was determined upon. Enucleation was performed and the bird-shot found within the eye.

Prognosis is always bad. If the injured eye alone was only to be considered we would not feel so worried as to the result. But the fellow eye so frequently becomes influenced by a slow and subtle process, especially if the injury be in the ciliary region.

There are exceptional cases, where the foreign body has remained harmless for many years, but such good fortune occurs but rarely. "The size, the situation, the nature of the foreign body and the amount of harm inflicted give us the elements of prognosis" (Noyes).

As regards treatment, the indications are to removal, as any foreign body within the eye is very prone to produce not only inflammation in it, but also its fellow. Many of these accidents are caused by pieces of steel or other metal that can be attracted by the magnet. A sufficiently large enough opening is required so as not to strike the fragment off as it is being withdrawn on the magnet. When the chip of iron has entered the vitreous the magnet is of especial value. Sight is not always saved but the globe is often preserved. If, after careful search, the magnet fails to bring out the iron, enucleation must be resorted to. Dr. Noyes mentions an interesting case in this connection. A man came under his care who three months before had received a bit of iron in the globe, and the eye had recovered. A second fragment penetrated the same eye, and he proposed to remove both with the magnet, and operated with the understanding that if two bits of iron were obtained the eyeball should be spared; if only one or none should be gotten, enucleation should ensue. This course was taken because the eye was certain to be sightless and extremely prone to cause sympathetic inflammation. One small particle was brought out and diligent fishing failed to get the other, and the eye was taken out. Only after a long search was the second fragment found sticking in the optic papilla. It was covered by exudation and so well concealed that there was strong reason for belief that this was the first piece which had entered the eye, and a three months' residence in the head of the optic nerve had not given rise to any symptoms in either eye. The piece was found by using the magnet as a searcher, as the half of the globe floated in water and was attracted to the magnet.

We cannot guarantee success in this any more than

any other severe surgical operation. We do, however, preserve useful vision to many. In a few, a low grade of inflammation is set up which causes the eye to shrink. If the eye is not saved, sympathetic trouble surely results. If the patient refuses an operation the danger he runs should be clearly stated. A few weeks after the injury the eye may look very well and the patient will congratulate himself on not submitting to the advice of the doctor. A few more weeks, perhaps months, will pass. Then he notices a slight redness "around the sight," the eye becomes painful to the touch. He is very much surprised to find he cannot see so well with the sound eye. After a little longer delay he again seeks the advice of the surgeon, but, alas! too late. Sympathetic inflammation has set in. He now consents to enucleation, but, sad to relate, the inflammation does not subside after the removal and he is doomed to total darkness.

I will close by quoting a sentence from Dr. Noyes's late work: "One of the greatest triumphs of the oculist is when he discriminates correctly the dangers of an injured eye and by skilful treatment and wise forbearance preserves to the patient his precious possession of sight or eyeball."

ARTERIAL SALINE INFUSION; A REPORT OF THREE ADDITIONAL CASES BY THE NEW TECHNIQUE.

By ROBERT H. M. DAWBARN, M.D.,

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In the MEDICAL RECORD of January 2, 1892, and again in the *Brooklyn Medical Journal* for October, 1892, the writer described a new and entirely simple method of saline infusion, which in severe cases of hemorrhage, of shock, and of cholera, seems destined to replace the former cumbersome plan of using a scalpel, searching for a collapsed vein, and tying therein a cannula for injection.

That plan is the insertion of a hypodermatic needle into the common femoral artery, and through this injecting the salt-water, by an ordinary Davidson syringe, directly into the circulation. In cases not almost moribund, the same device is to be used; but now the fluid is thrown simply into subcutaneous cellular tissues instead of into the artery.

Also the writer urged, upon physiological grounds, that the salt-water used should be very hot, not less than 120° F., or as warm as the hand can possibly bear. It was shown that no harm could result from even nearly 40° F. hotter than this; and on the contrary, the stimulant effect of the hot water upon the heart, and also upon the unstriped muscular tunic of the vessels, in restoring their lost "tone," was almost magical; as demonstrated by various experiments at that time detailed.

In addition to reports of experiments upon dogs by this new plan in the College of Physicians and Surgeons laboratory, a case was published in the MEDICAL RECORD wherein the patient—moribund from post-partal hemorrhage—was resuscitated by the intra-arterial salt-water infusion, and recovered.

The only objection (a self-evident one) to the device, is the hesitancy naturally felt to pierce so large an artery; and this vanishes when one reflects that the most prominent plan now used by surgeons for aneurisms so placed as to be inoperable by ligation, and yet threatening rupture, is that of Macewen, of Glasgow; which is needling, and in which long needles are thrust—a dozen or so—into the sac, and left for many hours, to cause thicker deposits on the walls—and this with benefit, as a rule.

If a diseased vessel can safely stand such treatment as this, it seems a mild inference that a sound artery can bear a single needle for a single half-hour. And such has been my experience so far.

Of course, if our patient be not too perilously weak, the salt-water may simply be thrown into the cellular spaces beneath the skin, and diffused by rubbing. Also a warm saline enema should be given in either instance. But in critical cases no one should trust to these plans alone, but all would prefer to make sure that the heart and blood-vessels get the benefit of the injection; and here the practitioner must choose between the old and cumbersome, and the new and simple.

How many family doctors will actually, think you, take out their unaccustomed scalpel in such cases, hunt up that cannula which must be tied in, and then incise and search for the collapsed vein? Echo does not answer.

I verily believe that many a patient has died from bleeding, of one or another origin, who could easily have been saved by the simple plan of arterial infusion which the writer has devised, and that many such will be rescued thereby.

All that we need will be always readily at hand: 1. A hypodermatic needle—largest size preferred. 2. A Davidson syringe, from which the usual nozzle of metal or vulcanite rubber is removed. 3. Boiled water (for aseptic reasons), hot as hand can support, plus a heaped teaspoonful of table-salt.

Never omit the salt—it would be fatal to mix plain water with the blood, as this at once dissolves out the hæmoglobin from the blood-disks; whereas even so small an amount of salt as that named—six parts per thousand—renders it safe, and, for practical purposes, seems as good as the most complicated saline-alkaline formula possible.

I need hardly add here that blood transfusion, either mediate or immediate, has now been dropped by almost all surgeons.

When a person has bled to death, half his blood (roughly estimated) still remains in his body; and if this is properly increased in bulk by an innocent fluid, this added bulk is all that the heart needs to make it resume work. The remaining blood-cells support life until nature increases their number again, which is done with almost magical speed.

As to the amount of salt-water needed: Here let me say that while a pint at a time is enough within the artery, the operator cannot seriously err on the side of throwing too much into the subcutaneous connective tissues. Almost always the mistake is made of injecting less than half the right amount—which is usually at least two quarts; and a gallon would do no serious harm if properly distributed in a dozen or more spots. The half-filled arteries of hemorrhage or shock, or the thickened blood of cholera, will promptly use what is needed. If there be an excess over this amount, in a few hours to a day or so, it will gradually be taken up from the connective tissue, meanwhile doing no harm, and the kidneys will dispose of it.

The doctor makes the mistake indicated (of using too little saline infusion under the skin), because he estimates only the actual blood lost in a hemorrhage, and seeks simply to replace this same bulk of fluid. He forgets that because of shock (caused by that bleeding), the vessels have lost their "tone" and are almost completely dilated. The patient has bled into his own veins as well, and the brain and heart are made doubly anæmic thereby. Remember, the abdominal veins alone are capable, when paralyzed, of holding all the blood in the body.

For the benefit of those who did not read the original article in the MEDICAL RECORD, it may not be amiss to repeat the technique of arterial infusion.

The Davidson syringe, needle, and hot salt-water being ready, the operator now feels, just beneath the middle of Poupart's ligament, for the femoral artery, here large enough in calibre to carry a lead-pencil. If the heart is still beating, this great pulse can almost always be felt. The aspirating needle is now forced gently and directly into the artery, entering it at right angles; not with a sudden plunge, but by a slow, rotary movement. As soon as the point is within the lumen, bright-red blood will fill

the needle instantly; whereupon it is held very firmly and steadily in place while an assistant slips over the base of the needle the end of the syringe, already filled, and ties it in place with a thread. The solution is now thrown into the arterial current steadily, and necessarily slowly, which last is an added point in favor of this plan. It takes about one-half hour for a pint to enter.

If the subject be very fat, an aspirating needle is preferable to the hypodermatic, which would here be too short to be held in place steadily; though, indeed, lacking the former long needle, a simple incision through the fat may be made, enabling one to approach the vessel more nearly and readily with the fingers.

The Davidson syringe, if old, should be disinfected by pumping boiling water through it before use. If leaky, hold the bulb, and the hand working it, beneath the salt-water, to avoid throwing in air. To maintain the temperature at about 120° F. the bowl containing the solution should be placed in a larger one, holding much hotter water. In this wise, by adding from time to time to the heat of the outer bowl or pan, that of the inner vessel may easily be kept as hot as the hand can bear. As soon as the circulation seems improved somewhat, the subcutaneous method of infusion should supplant the arterial.

In my original article on this subject the technique included the use of a soft-rubber (Nélaton) catheter, to connect needle with syringe. Added experience proves this unnecessary, and it is accordingly dropped.

I have now to report four new cases of saline infusion, in three of which the arterial method was used.

Case I.—Mrs. R——, a patient of Dr. Charles S. Collins, of this city. She was shot just above the left kneecap some days previous to the date of operation. Every symptom pointed to septic infection of the joint, and the patient's general condition was of the worst. Her pulse was feeble, her temperature high, her system shattered from hard drinking. In fact, her husband, for a long time previously, had refused to live with her because of her drunkenness.

Operation on February 4, 1892, Drs. F. J. Brockway and C. S. Collins assisting. The bullet was found embedded in the femur and removed. The joint was distinctly purulent; it was washed out and a half-dozen drainage-tubes inserted where most needed. The patient, simple and brief as was the operation, and almost bloodless, was now in collapse. She presented every evidence of extreme and acute shock, threatening death almost at once. The pulse was 160 to 170, and almost too thready to be counted. Strychnine and strophanthus and whiskey by needle were employed; also a hot enema containing whiskey, and all the usual methods. These not causing rallying, the case seemed to me to call for saline arterial infusion at once. Because of shock the patient was bleeding into her own veins, if I may so phrase it. In fact, I may remark that a certain distinct, severe, and acute type of shock so closely resembles concealed hemorrhage as to be practically undistinguishable from it; and, indeed, the treatment of each should be identical. It is well known that gynecologists now suspect a slipped ligature, and reopen the abdomen, where a few years ago the patient believed to have "shock" was allowed to die unaided, while the open vessel steadily drained away her life-blood.

I am a believer in preventing shock, if possible, rather than treating that grim and deadly enemy after it has our patient in its grip. At present the best single drug for this purpose is strychnine. When shock is already present it may wisely, if cautiously, be carried to the point of producing moderate tetanism; and under its use the pulse, in favorable cases, falls in frequency and rises in strength. But why, if this be a fact, may we not wisely give it in fairly full doses for a few days before our operation, as a preventive?

And why would it not be wise, at the end of any and every operation grave enough to make shock a probable result (though because of the ether not yet at hand), to inject subcutaneously a quart or two of hot salt-water? It would be painless, the patient not yet being out of anæsthesia. It would certainly be harmless. And I believe it would do much to prevent, by maintaining filled blood-vessels, an otherwise fatal shock from developing. I believe we shall ultimately see this done as a matter of invariable routine after all severe operations.

This digression may be pardoned me when we reflect that less advance has been made of late years in our treatment of shock than in any other subject of prime importance in surgery.

To return to our patient. The hypodermatic needle was inserted in her right femoral artery, the vessel being found at the first attempt. A pint of hot saline solution was thrown in by the fountain syringe—which plan I do not like, both because it is impracticable in rooms with low ceilings, and because it is impossible to maintain so well thereby, as by the Davidson syringe and two dishes, an evenly hot temperature in the infusion fluid. Following this first pint, about three pints more were injected, this time into the subcutaneous spaces; and the lumps (eight or ten) so produced on the thighs were diffused by rubbing with the vaselined hand.

The woman steadily revived. Her heart-beats slowly but regularly decreased in frequency. Dr. Collins remained by her side several hours. At length her pulse fell to a trifle under one hundred, and as it was also good in quality, he took his departure feeling that she was out of danger and could safely be left a short time. Before going he expressly warned her to lie absolutely quiet. No sooner had he gone than she demanded whiskey. This was produced by a relative. She sat up to drink it—and dropped back dead.

I think it will be admitted that this woman would probably have recovered had she obeyed orders, thus avoiding this sudden strain on her heart.

Case II.—Mrs. D——, seen on June 28, 1892. This patient was one in whom the hemorrhage was due to placenta prævia. She was attended by Dr. J. Milton Mabbott, of this city, who called me in to use saline infusion, because in his judgment her circulation was so bad as to require it. The bleeding which followed delivery had ceased by the time of my arrival. I found the lady pale and covered with cold sweat, restless in the extreme, delirious, asking for air—in a word presenting the usual, and some unusual, signs of anæmia; but as her pulse was not extremely and critically bad, I proposed to inject the salt-water simply subcutaneously.

Dr. Arnold Burkelman was also present, and asked me to use the intra-arterial technique, as he had never seen it. This I accordingly did, the needle entering the artery at the first attempt, as shown by the arterial blood coming from it. Possibly a pint of hot salt-water was thus injected, and possibly between one and two quarts more subcutaneously—I think more nearly the latter amount. The reason I am in doubt is, that in her extreme and even violent restlessness she several times upset the vessel containing the solution.

The subsequent history of the case was thus reported to me by Dr. Mabbott: "Our patient hung along for six days on the ragged edge of dissolution, and then died of exhaustion. She had no fever, no further hemorrhage of great amount, though Dr. Burkelman was sent for late one night because of a certain amount of bleeding. Of course *any* flow was too much in her state. There was no involution of uterus appreciable at the end of six days; apparent absolute inaction."

Case III.—Marie M——, a servant, had been bleeding steadily from the uterus for six weeks, and had repeatedly refused medical aid, although her mistress was much alarmed by her pallid face. At length, on the night of September 16th, I was sent for in haste. Marie had fainted, and had with difficulty been restored to consciousness.

On examination digitally, I found a piece of flesh pro-

truding from a somewhat dilated cervix uteri. Touching it seemed to start bleeding afresh. She claimed virginity and was indignant when this was doubted. (*En passant*, next morning she admitted pregnancy, and said that a mass had "come away" some days before, and been disposed of in the water-closet.) She was put under ether; the uterus was emptied thoroughly by the finger and was washed out. It was only about three inches in depth; therefore I did not deem it essential to tampon its interior, but placed a solid and firm vaginal tamponade in place, which easily controlled bleeding.

The patient was alarmingly weak, as may be imagined from the duration of the hemorrhage as well as its amount. I proceeded to use arterial saline infusion. The femoral was entered at the first attempt, and a pint injected as hot as bearable. Following this, about two quarts were thrown under the skin here and there, four to six ounces in each spot, and all thoroughly massaged with vaselined hands.

The patient's pulse gradually gained in vigor. She was seen the following day by Dr. F. J. Brockway and myself, when the tamponade was removed. She complained somewhat of soreness wherever the needle had been inserted, but otherwise was comfortable. Her circulation had improved wonderfully. She made an uneventful and rapid recovery.

Perhaps this point will be as appropriate as another at which to refer to a criticism upon the new method of arterial infusion, which I have more than once heard; namely, that it is difficult to find the artery with the needle.

I can only reply that such has not been my own experience. A vessel big enough to contain a lead-pencil, and pulsating beneath the finger, ought to be an easy mark for a steadily and slowly introduced needle. Those who have not succeeded must in some respect have failed, either in delicate tactile sensation or else in technique. An example of the latter is a case published by Dr. Onuf-Onufrowicz, in the MEDICAL RECORD for October 1, 1892.

This gentleman very clearly and interestingly reports his case, but goes on to state that, upon endeavoring to introduce the needle into the artery by my technique, he pushed it into his rather fat subject at an angle of sixty degrees with the course of the vessel, directing it "with its point toward the foot." Naturally, he did not succeed in entering the femoral; although if his patient had been thin he might perhaps have done so.

I have now to record one remaining case in which saline infusion has recently been used, although only subcutaneously.

CASE IV.—On September 20th I was called to Elizabeth, N. J., by Dr. G. H. Bridgman. The patient was a baby of five months, suffering from gastro-intestinal catarrh, and had had so many watery movements, in spite of able treatment, that some hours before I arrived the case was regarded as hopeless.

I found a sunken fontanelle, pinched features, very rapid and feeble pulse; and felt that here, just as in cholera, there was indication enough for the Cantani method of treatment, so far at least as saline infusion subcutaneously was concerned. This was accordingly done: as usual, with very hot salt water, Davidson syringe, and hypodermatic needle. Into both thighs, just beneath the skin, a considerable amount was injected, which we estimated to be equal in proportionate bulk to two quarts in an adult. In addition I advised rubbing in hot cod-liver oil everywhere (except the abdomen) for an hour, three times in twenty four.

A considerable experience with infantile diarrhœa, begun ten years ago during a residence in the Nursery and Child's Hospital of this city, has convinced me that many a little life, otherwise inevitably lost because nourishment cannot be retained, may in this wise be saved.

In an hour of firm but gentle rubbing, nearly an ounce of the hot oil may be made to pass through the skin, and quite commonly the little patient falls asleep meanwhile, soothed by the massage. Sometimes hot, melted cacao butter will even more readily be absorbed than cod-liver oil. The next day Dr. Bridgman thought it wise to repeat the hot salt-water infusion, and so reported to me. The child steadily though slowly recovered from its gastro-enteritis. At this date, nearly two months after that of my visit, she is delicate, but has long been convalescent.

A few hours' investigation of this point, in the New York Academy of Medicine library, has convinced me that saline infusion in infantile diarrhœa is a treatment of extreme rarity. This should not be so. Between twenty five and thirty works on pædiatrics were consulted, and but two of these mentioned its use in this complaint. These were Henoch's "Lectures on Children's Diseases," vol. ii., p. 44 (1889), and *Revue des Maladies de l'Enfance*, p. 348, Juillet, 1892.

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NOTES ON ELECTRO-THERAPEUTICS IN PARIS.

BY HOWARD SMITH, M.D.,

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SINCE I came to Paris, I have visited the clinical hospitals and electro-therapeutic establishments, and have everywhere seen the appliances with which practitioners are already familiar.

There is one, however, deserving of special mention on account of several new features which are being experimented with: the laboratory of Drs. Gautier and Larat. They have made a practical therapeutic application of alternative currents through the medium of an aqueous bath, the electricity employed being obtained from the dynamos of an electric light company, modified and transformed by very ingenious contrivances.

The recent important experiments of d'Arsonval enable this treatment to be administered upon a sound physiological basis, he having proven that under the influence of these alternative currents the respiratory power of the blood is increased about fifty per cent. and hence nutrition must likewise be favorably influenced. We may indulge in the hope, based upon quite a number of successes, that chronic gout, rheumatism, and eczema, at least, may be much benefited by this means. They have also established a complete system of vibratory therapeutics.

Many of us have heard of the experiments of Drs. Vigoroux and Baudet with tuning-forks, made to vibrate by an electric attachment; the vibrations were conveyed to localized points of the body through the medium of a button placed in the desired position. Dr. Mortimer Grant, of England, later invented a vibrator or percutor, moved by clock work. Although good results were obtained, a later idea was to apply the vibrations to the nervous centres, and, to accomplish this, Drs. Gautier and Larat have had constructed an instrument closely resembling the form employed to take the shape of the head by hatters. When placed upon the head of the patient the many arms composing it are made to vibrate by a small electric motor on top. The effect is said to be wonderfully soothing to nervous patients and particularly beneficial in insomnia.

But what I most wish to draw the reader's attention to is a method called by Dr. Gautier interstitial electrolysis, which, although not altogether new, he has done so much for in the way of experiment and research that he may justly claim to have created it.

When an electrode of copper is connected with the positive pole of a battery and placed in the uterine cavity, for example, or embedded in the soft tissues, it is partially decomposed and an oxychloride of copper is formed, which permeates the tissues to a greater or less extent, depending upon the duration and intensity of the current.

In experiments upon the uterus of the rabbit removed from the body, he established the following facts:

1. The deposit upon the internal surface of the uterus is very appreciable.

2. The penetration of these salts of copper through the tissues is complete; the external surface is colored an apple-green as well marked as the interior.

3. One of the salts deposited is the insoluble oxychloride of copper; the other an organo metallic salt freely soluble.

A knife-blade placed in contact with any part penetrated by the salt becomes quickly covered with a deposit of metallic copper. By hypodermic injections in rabbits he found no toxic effects in quite large doses.

Let me add that the electrodes are of the purest material, being formed from copper deposited by galvanic action. High intensities are not required, and, as there is no cauterization, no scars result, which is of great advantage in some forms of disease, especially about the face.

The apparatus is of the simplest description, consisting of rods of various sizes for intra-uterine applications, needles and others of special form for the nasal cavities and for hemorrhoids, etc. They are easily cleaned with emery paper, and instead of insulating sheaths a solution of gum lac is applied. No binding screws are used, but fine wire wound several times around the end of the needle or rod of copper and attached to the battery in any convenient way.

In operating upon superficial tumors, sores, adenitis, etc., the author plants from two to twelve needles in the tissues, and after binding each connected with the other are attached to the positive pole of the battery.

He operates with low intensity from 30 to 50 milliampères, and the applications are of quite long duration, from ten to twenty minutes. In all cases it is best to reverse the current for a minute or more before withdrawing the needles which otherwise would be found adherent to the tissues.

Although the needles are scarcely discolored, if the punctures are examined with a magnifying glass it will be seen that the oxychloride of copper has stained the tissues far beyond the puncture, and that there is no trace of cauterization.

It is only a question, if pathological tissues infiltrated with this copper salt are restored to a healthy condition or not. The author of the treatment claims that it is undeniably more rapid and superior to any other in the treatment of uterine hemorrhages, endometritis and parametritis. Patients with interstitial hemorrhagic fibroid tumors, which no previous treatment relieved, even high intensities, have been cured of their pains, hemorrhages, and debility. Lupus of the face, hemorrhoids, and ozena are other diseases successfully treated.

The most interesting and important thing I have seen at the clinic of Dr. Apostoli is his demonstration of the practicability of ascertaining the condition of the ovaries as regards inflammation and suppuration by the application of the faradic and galvanic currents.

This subject was fully elaborated in a paper which he read before the Congress of Gynecologists at Brussels, September 15th, and will be published in the American journals; still a short *résumé* may be interesting: The application of the faradic current of high tension is a most efficacious remedy for ovarian pains of hysterical origin, while it is impotent to relieve these pains when due to inflammatory conditions of the appendages.

The application of these facts to diagnosis is evident. As regards the galvanic current, uterine intolerance is known to depend upon: *a*. Hysteria, in which case it soon passes off and may be readily recognized; *b*, fibrocystic tumors of the uterus of probably malignant origin; *c*, pelvic phlegmasias, including the intestines, which generally have a very characteristic history. If intolerance persists after the applications of from 30 to 50 milliampères, is followed by pain, fever, and no amelioration of the symptoms, and the above mentioned conditions are excluded, in all probability it is an ovaro-salpingitis, usually in a state of suppuration and demanding a surgical operation.

If, on the other hand, a dose of from 100 to 150 milliampères is well supported and followed by a diminution of pain, hemorrhage, etc., and without post-operative fever, the uterine periphery may confidently be stated to be in a healthy state, or at least there is no acute inflammatory lesion justifying operative procedures.

If the surgeon will avail himself of the advice of physicians skilled in this method of making a diagnosis, he will make fewer exploratory laparotomies and encounter fewer surprises when he does operate.

The last subject to which I would like to call the reader's attention, is the application of the alternative sensusoidal current to gynecology. The machine employed at the clinic of Dr. Apostoli is a magneto-electric machine of the Clark type, in which the ordinary stationary horseshoe magnets are replaced by circular ones which revolve around the bobbins. It is placed upon a sewing-machine table and made to revolve by the pedal going at the medium rate of speed, 4,000 to 6,000 alternations per minute, and a difference of potential of 32 volts at the maximum rate of speed, the alternations being from 11,000 to 12,000 per minute, and the difference of potential 64 volts. One pole is placed in the uterus and the other terminates in a large clay electrode upon the abdomen. The *séances* are of five minutes' duration, repeated two or three times weekly. During the last five months 34 patients with fibroids (12) and diseased appendages (22) have been treated, the total number of applications made being 320. Although not definitely established the following are the principal conclusions to be drawn from the experiments:

1. The alternative sensusoidal current applied intra-uterine is harmless and well-supported

2. Its application is not followed by a painful or febrile reaction, but is, on the contrary, most frequently accompanied by marked sedation.

3. It has no marked action in controlling hemorrhage, but, on the contrary, has sometimes provoked its continuation.

4. Upon pain its effect is very evident from the first *séances*, and frequently observable at their termination.

5. It is very advantageous in combating the leucorrhœa, which frequently, but not always, diminishes or disappears.

6 It has no appreciable action upon the hydrorrhœa found in connection with certain fibroids.

7. Its influence upon the anatomical regression of fibroids is not yet established.

8. It increases and favors the resolution of peri uterine exudates.

Further experiments may teach something more as regards the number of the alternations, voltage, duration of the *séances*, their number and frequency, which will give even better results, but for the present we may be contented to know that it is as Apostoli says, the remedy *par excellence* for pain.

An Unusual Number of Lumbrici.—Dr. F. C. W. Hounsell writes as follows in the *British Medical Journal:* "In August, 1891, I was sent for to see a little boy, whom I found in bed, very poorly, with temperature 104° F. History given: The patient has been ailing and out of sorts for some time; losing flesh, with constant hacking cough and, latterly, night perspiration. Physical examination revealed no disease of lungs, although breathing was rough. On inquiry, pain in abdomen existed, also mucus in the motions, but no blood; appetite capricious, with picking of nose and grinding of teeth; in short, all the usual symptoms of worms. Three powders of pulv. santonin—3 grains in each—were ordered alternate mornings, to be followed by castor-oil at night, with the result that ninety-seven ordinary round pink worms (lumbricoides) were evacuated. The child made a speedy recovery and was well in about ten days. The case is of interest from all the astonishingly large number of these ascarides which can exist in the bowels of a child of six years with no graver symptoms than those enumerated."

DISLOCATIONS OF THE SHOULDER.

By WILLIAM MEACHER, M.D.,

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To the experienced surgeon this paper may seem to be uncalled for, or a repetition of what is to be found in all the text-books on surgery. But I have written it for the ordinary practitioner, who has occasionally to deal with dislocation of the shoulder, in the hope that it may be of service to some.

This is the most common of all dislocations, and one of the most fruitful sources of malpractice suits; and a large majority of these suits come from the failure of the doctor to diagnose the injury. The practitioner who recognizes a dislocation of the shoulder when called to the case, although he fails at reduction, is in little danger of being sued for malpractice, so I feel like attaching rather more importance, in this paper, to the subject of diagnosis than to that of treatment.

The books on surgery describe a number of varieties of dislocation of the shoulder, namely, downward, forward, backward, and downward and forward—subcoracoid, subclavicular, and subspinous backward on the scapula. But the fact is, as Gross says, that in almost every case the head of the humerus is downward and forward, and more or less under the coracoid process. It is rarely in any other position, and to have what the books call a subclavicular dislocation, there must have been sufficient force to drive the head of the humerus, after leaving the socket, through the flesh or under the pectoral muscles, toward the sternum, to an unusual extent.

A dislocation directly downward is seldom found, because, should the head of the bone leave the socket in a downward direction, it would slip forward, more or less, into the axillary space, where there would be the least resistance offered to it.

I fear that the young practitioner is often confused by finding so many varieties of dislocation of the shoulder described, and even if each of these varieties could be recognized, the treatment, with very few exceptions, would be the same in all.

Dislocation backward, called subspinous, is rare, but is quite as easily recognized as a dislocation downward and forward.

To examine a patient for dislocation of the shoulder, divest him of all clothing down to his waist, and do not allow any of the clothing to remain on the sound arm or lie on his lap, take it entirely away. Seat him on a stool of the same height as a common chair, but do not seat him on a chair if you can provide a stool for him to sit on; the back of the chair will be in your way. Direct the patient to sit upright, with his hands resting in his lap close to the abdomen. Now seat yourself on a chair, squarely in front of him. If he has a dislocation of the shoulder, you will observe:

First. That the two elbows do not hang alike; the elbow of the injured arm will be canted out from the body about as much as the thickness of the arm more than the sound one.

Second. The natural mobility of the shoulder-joint will be lost to a great extent.

Third. The edge of a yardstick, or similar straight object, held against the outside of the arm, will touch or rest on the outer condyle of the humerus and the acromion process. But if the shoulder is not dislocated, the prominence of the deltoid muscle will hold the straight-edge out, so that it will not touch the acromion process. The prominence of the acromion is generally very observable, and you can feel a marked difference from that of the sound side. If the patient is a fleshy woman, the difference may not show much, but can be plainly felt.

Fourth. Now examine the axilla, and if the head of the humerus is there, instead of in the socket, you can feel it hard and round.

Fifth. Next pass a tape measure around under the axilla, and up over the top of the shoulder, about an inch in from the point of the acromion process; and if a dislocation exists, you will find that this shoulder measures somewhere in the neighborhood of two inches more in circumference than the sound one.

This is one of the most important diagnostic means we possess.

Bryant says this was pointed out by the late Mr. T. Galloway, in his Jacksonian Prize Essay, in 1849.

Sixth. Lengthening or shortening of the arm may occur in dislocation, or the length may remain unchanged. If the head of the bone is below the socket, and not much inward, the arm will be lengthened. But the head of the bone may be so far inward, under the coracoid, that the distance from the point of the acromion to the outer condyle of the humerus may be the same as that of the sound arm, or the head of the bone may be far enough inward under the clavicle to shorten the arm.

Seventh. Ascertain if the patient can place the hand of the injured arm on the opposite shoulder, while the elbow touches the chest. It is said this cannot be done if the shoulder is dislocated; now, if the patient is a fleshy woman, with comparatively small bones, and unusually lax ligaments, and have a very full bust, I certainly would not place too much dependence on this test. In male patients, however, and women who are not very fleshy, it is pretty reliable. It is in these fleshy patients, especially in fleshy women, that a luxation may be very obscure. I would strongly advise everyone in all cases, if a satisfactory diagnosis cannot be made otherwise, to place the patient fully under chloroform. If after a thorough examination the diagnosis is still uncertain, another examination should be arranged for the next day, and on several succeeding days, if necessary. A dislocation that is ever so difficult to detect at first is pretty sure to become apparent before the time passes in which it can be reduced.

A dislocation backward — "subpinous" — requires a somewhat different description. Looking at the front of the shoulder, there will be seen the flattening of the deltoid and prominence of the acromion, as in the other forms of dislocation; but the arm or elbow, instead of being canted out from the side, will be close to it, and the arm will be held forward more or less. Looking at the back, the head of the bone resting on the scapula is generally plainly to be seen—a round, hard tumor.

Most of the text books on surgery direct the administration of an anæsthetic to reduce a dislocation of the shoulder; but many of them do not speak positively enough on this subject, and it is astonishing how often reduction is attempted without anæsthesia, and therefore often without success. I believe that one of the reasons why practitioners so frequently try to reduce shoulder dislocations without anæsthetizing the patient is because we still are governed to some extent by the teaching of the days before chloroform and ether. Another reason is that some dislike to put a patient under an anæsthetic; but there are very few cases in which reduction should be undertaken without having the patient fully anæsthetized.

Many practitioners labor under the impression that a dislocation of the shoulder cannot be reduced without a great deal of pulling, so not infrequently the combined strength of two or three men is brought into requisition to pull the unfortunate member, and often without any anæsthetic, all this expenditure of force resulting only in torturing the patient. To illustrate this point I will mention that, not many months since, a man came to me saying he had his shoulder dislocated two days ago. He said it had been "put back," but continued to pain him as badly as ever. Upon examination I found that a luxation still existed. When informed of this he became very much alarmed; he said the doctor who claimed to have reduced it got three men to pull the arm for him, and they pulled as hard as they could, the arm itself testifying to his statements by the numerous bruises on it, and patches denuded of skin. He was actually afraid

that his arm would be pulled off if another attempt was made to reduce it, because he supposed that in order to succeed in reducing the dislocation it would be necessary to pull the arm harder than it had been pulled before.

But upon being assured that if he would take chloroform very little, if any, pulling would be required, he readily consented, and the luxation was reduced by manipulation without difficulty.

To reduce a dislocation of the shoulder, place the patient on a firm, level bed, near the edge; put him fully under the influence of an anæsthetic. For this purpose I much prefer chloroform, because one gets more complete relaxation from it.

Reduction by manipulation should be tried first. It appears to be difficult for writers on this subject to make themselves fully understood when describing the movements of the arm and forearm which they recommend to be made in trying to reduce a dislocation. Professor Edmund Andrews, in his excellent treatise in the "International Encyclopædia of Surgery," on "Injury of the Joints," says: "By manipulation is meant a combination of the various passive movements, such as flexion and extension, adduction and abduction, circumduction and rotation, by which dislocations of the shoulder can be reduced without the employment of great traction."

I will attempt a little further description of reduction by manipulation.

The patient being fully under the influence of chloroform, and lying flat on his back on the bed, with the injured shoulder near the edge of the bed, place yourself at the bedside, a little above the patient's head, grasp the forearm at the wrist, flex the elbow until the forearm is at a right angle with the arm, holding the forearm perpendicular; grasp the arm at the elbow with your other hand, and while keeping the forearm perpendicular abduct the arm as much as you can without using much force. Now rotate it by pulling the forearm from the perpendicular over toward you, that is, in a direction away from the patient's feet; do not use much force in this movement either. Now carry the arm inward over the patient's face, and downward over the chest, at the same time turning the forearm downward toward the patient's feet, and straighten the elbow, thus bringing the arm down close to the patient's side; the last part of the manœuvre should be made rather quickly. If this does not succeed, after being tried two or three times, then have recourse to Cooper's method—the heel in the axilla. This is probably the most efficient operative procedure the practitioner can adopt. If the dislocation is on the patient's right side, remove the shoe from your right foot, if on his left side, from your left foot, seating yourself on the side of the bed, or on a chair close to it, or, if he lies on the floor (which is as good as lying on a bed, if not better, for this manipulation) seat yourself on the floor beside him, with your face toward his. Nearly all the works on surgery contain good cuts of this position. Now grasp the wrist of the dislocated arm with both hands, place the foot from which the shoe has been removed in the axilla, and with the arm at an angle of about forty-five degrees from the patient's body begin pulling steadily and quite strongly, making counter-extension with the foot in the axilla; after pulling steadily for a short time (if the bone does not come into place as it often will, by the pulling alone), swing yourself, together with the arm, toward the patient's body, until the arm is brought to the patient's side, continuing the steady pull as you move the arm inward. You will, by this inward movement, pry the head of the bone over your foot, out to the socket. This manœuvre may have to be repeated several times, but you are almost certain to succeed with it.

As Professor Andrews says, this procedure, although theoretically faulty, has probably been used in more cases than all other methods combined. It seems irrational, he continues, to pull the head of the bone downward when it is already below the socket. But the secret to success is the prying-out force which is exerted on the head of the bone.

A procedure which might be called a modification of Cooper's method may sometimes be advantageously employed; for example, in cases where the scapula, from injury or otherwise, is preternaturally movable, or where the head of the bone is driven very far inward under the clavicle.

Place the patient on the floor, on his back. When he is fully anæsthetized take off both your shoes, and seating yourself on the floor, at the injured shoulder, so that when your legs are straightened out they will be at right angles to the long axis of the patient's body; place one foot close up in the axilla, and place the inner edge of the ball of the other foot on the acromion process (you can in this way make very strong counter-extension on the acromion); then, taking a firm hold of the wrist of the dislocated member, with both hands, as in the last-described procedure, pull the arm steadily and strongly, keeping it at a right angle with the patient's body, rotating the arm more or less while pulling it.

A dislocation backward is to be reduced by one or the other of the two last-described procedures.

While there is very little danger that one man, in operating, if no mechanical appliance is used, and the patient is an adult, will pull hard enough to cause a rupture of the axillary artery or vein, still it is proper to exercise more or less caution in certain cases.

In operating, your hands or the patient's arm may become sweaty and slippery, so that you are unable to pull as hard as you need to; in that case a long towel, or a strong strip of sheeting, four or five inches wide, and of sufficient length, put on to the arm just above the elbow by a clove hitch, will give you the required hold. Old dislocations, ancient dislocations, and chronic and neglected dislocations, are terms applied to cases that have remained unreduced for several weeks or months. Generally, the older a dislocation is, the harder it is to reduce, and *vice versa*.

Generally, after five or six weeks the chances of reducing a dislocation of the shoulder become limited considerably; even after two or three weeks some dislocations will be reduced with great difficulty, while others may be reduced with no more trouble at the end of six or eight weeks. Cases are recorded of the reduction of shoulder dislocations after the lapse of all lengths of time up to a year, and even two years, but of course those cases were exceptional. Very seldom can there be any question about attempting the reduction of a dislocation that is not more than two or three weeks old; but when you come to one which is of six or more weeks' standing it always demands very careful consideration.

Continual pain and suffering from pressure by the head of the bone on the axillary nerves and vessels, with very little motion or usefulness of the member, would certainly warrant a good trial at reduction in cases that are eight or nine weeks old, more or less. On the other hand, if the patient suffer no pain, and have a fair amount of motion at the shoulder, except the overhead motion, as frequently comes to be the case in course of time, so that most of the usefulness of the arm is retained, then it is generally advisable to let the case alone, because of the danger to be encountered in trying to reduce old dislocations of the shoulder—the danger of injuring the axillary nerves, and, above all, of rupturing the axillary artery and vein. These accidents have occurred a good many times, and a number of patients have lost their lives in consequence. Before operating in old cases be sure to make the patient fully acquainted with the risk to be taken.

In operating in these old luxations it is best to employ the first two methods described—manipulation and Cooper's method, the heel in the axilla. The adhesions about the head of the bone are first to be broken up by manipulation, viz., rotating the arm quite strongly, first one way, then the other, then abducting and adducting,

then rotating again. A sufficient amount of force can be exerted on the arm by the leverage of the forearm to loosen the head of the humerus from its adhesions in most cases. When you think you have sufficiently broken up the adhesions, and loosened the head of the bone, then have recourse to Cooper's method, operating exactly as in a recent dislocation, only it may be necessary to use more force in the pulling and prying out. It may be necessary to repeat the loosening process several times before it becomes possible to dislodge the head of the bone and place it in the socket.

Progress of Medical Science.

Dermatol in Diarrhœa.—Dr. Colasanti (*Berlin. klin. Wochens.*, No. 34, 1892) has employed dermatol in the diarrhœa of typhoid, in enterocolitis, in the diarrhœa of malarial origin, as well as in that attending convalescence from acute febrile diseases, and is convinced that in this preparation we possess one of the best and safest locally acting agents in modern therapeutics.

Gonorrhœal Conjunctivitis. — In the *Geneeskundtijschrift von ned. Indie*, xxi., Haga reports good results from Burckharot's plan of treatment. Once every day a solution of salicylic acid is employed as a douche for the eye, 1 to 5 parts to 1,000. Every two hours one drop of nitrate of silver solution, 1 to 600, is carefully dropped into the eye. Compresses wet with tepid infusion of chamomile flowers (*Anthemis nobilis*), one quart containing fifteen grains each of salicylic and boracic acid, are used constantly.

When to Trephine.—Dr. Lanphear (*Kansas City Medical Index*) says we should operate in every case of fracture of the skull with depression, even if there be no symptoms whatever, and that instances of traumatic epilepsy will diminish in proportion to the frequency of operation, no matter how slight may be the depression. In all cases of local injury to the skull, followed by evidence of inflammation of bone or persistent symptoms of brain irritation, or of pus between the bone and dura mater, the trephine should be resorted to. Where after such injury unconsciousness persists for more than an hour, exploratory operation, including opening of the skull, should be done. The appearance of stupor some hours after a head injury indicates meningeal hemorrhage, and requires trephining at the point of injury if this be known, or at a point indicated by cerebral localization, usually the region of the middle meningeal.

Fracture of the Neck of the Femur Treated by the Thomas Hip-splint.—Dr. John Ridlon (*The Chicago Medical Recorder*, August, 1892) reports twelve cases of fracture of the neck of the femur treated by means of the Thomas hip-splint, which he thinks has many advantages over the methods now most in use by weight and pulley, long wooden side-splint, etc. The advantage of the plaster-of-Paris splint is chiefly theoretical, and counterbalanced by equally serious disadvantages. In women it is with difficulty kept free from wetting with urine, hidden points of irritation are complained of, and there is risk of pressure-sore, and the dressing cannot be changed without more or less serious harm to the fractured part. In the Thomas splint the author thinks we have an apparatus which presents the advantages that it secures posterior support to the fracture, gives fixation without compression of the fractured region, except posteriorly, allows the patient to be lifted with ease, does not interfere with the groin, favors cleanliness, admits fixative traction, can be applied without moving the patient and without assistance, and presents no difficulties after the initial application. When possible it is better to fit the splint before the patient has been moved from the spot where the accident has happened. The device aims to prevent motion in the axis of the limb; to prevent motion by bending the limb in any direction; to do this without circumferentially constricting the region of the fracture; and to enable the patient to have the bed-pan adjusted without pain, and without disturbing the relation of the parts. The following are held by Thomas to be the essentials of treatment: 1, To uninterruptedly and as effectually as possible arrest flexion at the hip-joint; 2, to continue the treatment until the symptoms of genuine repair and soundness of the joint are diagnosed; 3, to obtain the best possible restoration circumstances permit, so that no lameness attributable to flexion be a permanent reminder of treatment. The author agrees with Stimson that the principal aim of treatment should be to keep the inflammatory reaction within the narrowest limits and to secure union at the earliest possible moment, even if in a faulty position.

Chlorobrom in Sea-sickness.—Dr. Montague Gunning, writing in the *British Medical Journal*, says that he has relieved a number of cases of sea sickness by means of chlorobrom given in one to two tablespoonful doses.

Fracture of the Spine by Muscular Action.—At a meeting of the Paris Academy of Medicine, on September 27th, MM. Vernenil and Forestier reported the case of a man of good physique who slipped on the ice and saved himself from falling only by a violent effort. He immediately felt a violent pain in the lumbar region, which yielded after a few days' rest in bed, but a tenderness and slight pain on exertion persisted. Six months later he began to suffer from severe girdle pains, and soon thereafter a prominent knuckle was noticed in the lower dorsal spine. The original injury was diagnosed by the author of the paper as a fracture from muscular effort.

Bacteria of Phosphorescence.—According to a paper by T. Forster, of Amsterdam, the bacteria which produce the light of phosphorescence are able to multiply and develop at the freezing point of water. They not only live in the sea, but are met with in brackish and fresh water, upon victuals, manures, etc. This agrees with the fact that victuals kept for some days in an ice-chamber gradually assume a disagreeable smell and taste; and that meat can be preserved from putrefaction for days, but not for weeks. If foods are to be preserved at a low temperature for a long time, besides cold, a second element is necessary—dryness.—*Popular Science Monthly.*

Periodicity of Venereal Diseases.—Dr. Mounier, of Utrecht, is a disbeliever in the efficacy of the regulation of prostitution in diminishing venereal diseases. "The fluctuations of venereal diseases," he said, in concluding a report on the occurrence of these diseases in the Belgian army, "appear to follow constant general laws. These maladies increase and decrease without the least reference to the feeble efforts of the police sanitary regulations which are intended to put a stop to them."

Calomel for Hæmorrhoids.—The local application of calomel is recommended by Dr. James as a measure affording great relief in cases of irritable and inflamed hæmorrhoids. He says that he has never known it to fail.

A Substitute for the Nasal Douche.—Dr. Bloebaum no longer uses the nasal douche in removing crusts from the nasal cavity. He simply twists a long and thin roll of cotton onto a knitting-needle, introduces it into the nose, and withdraws the needle, leaving the cotton in the nose. A second and third are introduced thus, until the entire cavity is filled. Then one may begin with the opposite side and do likewise. In the course of a quarter of an hour the mucous membrane begins to secrete profusely, and if the cotton is then removed, it will be found that it is saturated with secretions, and the crusts lie on the rolls of cotton, thus leaving a nicely cleaned cavity for the application of the remedies. He never employs any watery solutions, but salves, which are rubbed into the nasal mucous membrane, or powders which are insufflated.—*Lancet-Clinic.*

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THE MODERN TREATMENT OF DIPHTHERIA.

A LITTLE research shows that during the past year over thirty different authors have contributed their views and results regarding the treatment of diphtheria. Of these one each was from Switzerland, Turkey, and Italy; two were Scandinavians; 3 Hungarians; 5 Americans; 60 French, and 12 Germans. The centre of interest in diphtheritic therapeutics seems to be, therefore, in Germany, while in England the subject apparently arouses little attention. A perusal of the various reports shows that a practically unanimous opinion exists as to what should be the object in treating diphtheria. It is to kill the bacilli and streptococci, to counteract the effect of their toxic products, and to sustain the strength of the patient.

Regarding the best way to do this, however, there is hardly any agreement. Leonardi advises a supporting and expectant treatment; he denies the value of ice and extols that of permanganate of potash and saline sprays. Dr. A. Baginsky reports the results of his experience in the Kaiser Frederic Krankenhause, where 244 cases were treated, with 40 04 per cent. of deaths. He thinks that the best disinfectant locally is corrosive sublimate, 1 to 3,000 for gargles, and 1 to 500 for local applications. He also approves of lactic acid and papagotin sprays for dissolving the membranes. While Baginsky may be right about his treatment, one must feel that it predicately does no good if forty per cent. of his patients die, even if his cases, as is stated, were bad ones.

Dr. Strübing uses locally solutions of codo-phenol, tincture of iron and sulphur, with lime-water gargles, and internally cyanide of mercury. Later he makes applications of carbolic acid, turpentine, and alcohol.

Dr. Wilhemy, of Berlin, has a mode of treatment which is heroic enough, and which, he asserts, has been uniformly successful when he saw the patients early in the disease. He wraps a bent probe with a thick layer of cotton, which is saturated in a twenty per cent. solution of chloride of zinc. This is applied to the throat, which is thereby thoroughly cauterized. Gargles of lime-water and oil of peppermint are then used, and in two or three days a milder cauterization is made. In advanced septic cases this treatment does no good.

Barbier, after many trials, finds that the most effective local application is a twenty per cent. solution of sulphocarbolic acid. This is made hourly during the day, less often at night. After the applications irrigation with a weak antiseptic fluid is employed.

Dr. Stein recommends most highly Burghardt's method of treating diphtheria. This consists of strong feeding, lime-water gargles, and the application locally of a powder composed of equal parts of flowers of sulphur and quinine.

Dr. Jänicke, of Görlitz, found by experiment that methyl violet had a most powerful destructive effect on the Loeffler bacillus. He therefore paints the throat with solutions of this drug every two to five hours. Dr. C. Höring has used the same treatment in fifteen cases, of which two died. He applies a three per cent. solution to the throat, previously dried. Dr. Taube, of Leipzig, has used methyl-violet in ten per cent. solutions, and Dr. H. Beyer employs a powder consisting of two parts of the methyl and ninety-eight parts of sugar.

Dr. E. Güntz thinks diphtheria can be controlled by making the patient drink a bottle of "chrome-water" daily, each bottle containing one-third grain of bichromate of potash.

Dr. Ozegowski for ten years has successfully treated diphtheria by pencilling the throat every two or three hours with carbolic acid, citric acid, and tincture of iodine, each three to five parts, brandy one hundred parts. Salt water gargles are also used.

Dr. André Martin used a local application consisting of carbolic acid and camphor, each one part, water and glycerine, each fifty parts.

Dr. Moskowitz, of Budapest, thinks it enough to keep the neck smeared with mercurial ointment; and Dr. Klein, of Lugos, takes the same view. Both authors lead one to conclude that the expectant treatment is as good a one as any.

Dr. Wissing believes in saturating the air of the room completely with oil of turpentine. He evaporates about five ounces daily in the room and near the patient.

Dr. Schwarz recommends rozo-iodol in solution or powder; and Dr. Hagedorn, of Hamburg, believes in the galvano-caustic treatment of the local process. Dr. R. Pimilla has used bromine successfully in two cases.

A review of the foregoing and of other communications leads one to somewhat gloomy conclusions regarding the therapy of diphtheria. Out of the mass of oils, astringents, antiseptics, dyes, solvents, and caustics, it does not seem possible to make any selections, to say that one is better than another, or that any of them do much good. With a definite problem now before him, it seems as if the physician treating diphtheria should be able to say what are the best drugs to apply, what is the best way to apply them, or whether any should be applied at all. We hope that in a year or two the therapeutics of diphtheria will be in a more satisfactory state.

The Venerable "Sanitarian" is much incensed over the Government quarantine order issued by the President. The *Sanitarian* thinks that the President's signature was secured to "the most disgraceful edict against practical sanitation that has emanated from any official entrusted with the duty of protecting public health during the last thirty years." The *Sanitarian* emphasizes this by putting on mourning borders.

FAILURE OF THE PLAN OF LICENSING PROSTITUTES.

Some interesting facts have been published concerning the regulation of prostitution in France. It seems that the attempted regulation of prostitution by licensing the keepers and inmates has had the effect of lessening the number of these houses very rapidly. In Marseilles, for example, the number has fallen from 125 in 1873 to 31 in 1889. The same thing has been noted at Lyon, Nantes, Montpellier, and Avignon. It is not to be inferred from this that the number of prostitutes is less, but quite the contrary. They object to being under state supervision and evade the law. But the conclusion is inevitable that licensing is an ineffective measure. And the opinion is gaining ground that the best thing to do is to educate the people and the prostitute to a knowledge of the dangers of venereal disease. The prostitute should be encouraged to go where she can get free treatment, and should be admitted to the hospitals, and then treated until she is well. It is also advised that if a prostitute, while suffering from a venereal disease be found still exercising her calling, she should be punished. The latter provision seems just, yet it might often happen that the woman was quite unaware of her illness, and how is her ignorance to be established? What shall be done also with the man who deliberately frequents brothels when he has an uncured gonorrhœa or syphilis?

On the other side of the question we append the following item which is credited to the *Union Médicale*: "2,941 registered prostitutes were arrested for various offences in Paris during the year 1891, and only 251 of them were found to be diseased; whereas, among 2,637 clandestine prostitutes arrested during the year for similar offences, 1,155 were found to be diseased."

HYPODERMOKLYSIS.

Hypodermoklysis is the name given to a somewhat novel therapeutical measure devised originally, we believe, by Professor Cantani, of Naples. The name is long and of formidable appearance, but as it is composed of three smoothly flowing trochees and pronounces itself easily, we can tolerate it until the thing itself is established in our art or dropped into oblivion. Dr. Hare has recently given a good definition of hypodermoklysis in an article reviewing some of the advances in therapeutics (*Therapeutic Gazette*). He states that hypodermoklysis is a method of supplying fluid to the body to replace that lost through excessive purging, as in cholera or in cases of hemorrhage. It is also used to wash out from the body various impurities circulating in the blood or other liquids, and to flush out the kidneys. The process consists in the introduction into the subcutaneous tissues of certain qualities of normal saline solution. As is well known, a quantity of liquid equal to four times that of the normal amount may be passed directly into the veins without producing a rise of blood-pressure, and experiment has shown that within fifteen minutes after the saline fluid flows into the subcutaneous tissues an increased flow from the kidneys takes place. It is not safe to infuse a greater quantity of liquid than one drachm to each pound of body weight (about one pint to an adult) in each fifteen minutes, as if this amount is exceeded, the accumulation of the liquid in the system is so great that the tissues become bathed and finally drowned, because the kidneys cannot excrete the liquid fast enough.

To carry out the operation the sterilized liquid to be infused—namely 7 parts of sodium chloride to 1,000 parts of water ($3\frac{1}{2}$ grains to the ounce)—is placed in a glass jar which is absolutely aseptic, and to which the air only gains access by means of a glass tube filled with sterilized cotton. From the lower part of the vessel leads a tube, to which is attached a trocar, also rendered absolutely sterile. The skin over the place where the liquid is to enter is to be rendered absolutely sterile, and the trocar is then inserted into the subcutaneous tissues of the thighs, or preferably of the abdomen, and liquid allowed to flow at the rate named, the pressure being obtained by raising the container two or three feet above the belly-wall. As the liquid enters, a swelling appears in the subcutaneous tissues, which soon disappears after the infusion ceases, and can be much aided in the absorption by the use of massage.

Cantani and Oser have used this method in cholera, but recent experience has sufficiently demonstrated that it has slight, if any, value. It does not compare in efficacy with intravenous saline injections. The results after hemorrhage, however, are said to be very good. Sahli, of Berne, has used hypodermoklysis with very good results in the treatment of uræmia, and he thinks that not only are the poisons washed out of the system by this method, but, in addition, that the dilution of the poisons prevents them from acting so forcibly. In septicæmia, diabetic coma, and similar states this method of treatment should be employed, and results carefully recorded and reported.

THE FOOT-BALL MANIA.

The foot-ball epidemic is upon us, and it may be noted that each year the attack is more widespread and violent. Throughout the East foot-ball has affected not only the colleges great and small, the preparatory schools and athletic clubs, but it has reached the young men of the small towns and villages, and foot ball is becoming as much the talk in the autumn as base-ball is in the earlier season. In England, every Saturday from September to April is devoted to foot-ball in all the towns throughout the land, and something of this sort is going to develop in the United States. The matter is one of importance to anxious parents, to growing youths, and to medical men. In England foot-ball casualties were very frequent, and formed a regular part of the medical chronicles of the week. Fatal accidents were not extremely rare.

Of late, we are told by Mr. Edwards in *The Nineteenth Century*, serious accidents are very uncommon, owing to the strictness of the rules and the enlarged powers of the referee. English foot ball has passed through its dangerous stage. In this country, the number of serious accidents is not great, but bruises, sprains, and fractures are very common. The ankle and knee are naturally the favorite joints to be affected, while the nasal bones are those which are the oftenest broken.

The increased interest in foot-ball has caused some natural, and perhaps justifiable, alarm, and we have been inclined to make dolorous comments. Athletic fevers cannot be checked, however, and the wisest thing to do

meanwhile is to urge those in authority to make the rules as rigid as possible and to give the referee full powers for punishing violent and unsportsmanlike conduct.

THE ETIOLOGICAL TREATMENT OF SKIN DISEASES.

It is becoming more and more apparent that successful treatment in dermatology must come to depend more largely upon etiology. The effect which the somewhat rapid transitions of views concerning the cause of many dermatoses has already brought about in the management of many conditions strengthens this belief. As one by one the various diseases of the cutaneous surface are found to depend upon some microbe, the treatment will naturally become more microbicidal; but the error will have to be carefully avoided of making the local treatment all-important and neglecting constitutional conditions which require attention not less than the external lesions.

Dr. Walter G. Smith has shown, in an excellent article published in the *Dublin Journal of Medical Science*, January 1, 1892, how recent advances in etiology have already had a decided bearing upon treatment. While Unna's "Flora Dermatologica" cannot be said to be counterbalanced by any array of new remedies, it is the presumption that each of the fifty mucors, and the twenty different kinds of penicillium, to say nothing of aspergilli and the various cocci and bacilli found in eczema alone, does not require a separate and special drug for its destruction.

The author referred to speaks especially of erysipelas, furunculosis, carbuncle, and whitlow as local diseases depending upon parasitic infective processes whose successful treatment requires the use of parasiticides. Thus in furuncle the indications are:

1. To destroy by parasiticides the intruding cocci before they have induced necrosis of tissue.

2. When necrosis has occurred, to hasten as much as possible the expulsion of the necrotic plugs with their contained cocci.

3. To guard against the development of new boils through infection by means of cocci spreading from the older boils.

4. To place the organism in such a position as to render it as resistant as possible to invasion by micrococci.

The parasitic nature of erysipelas is accepted as an undeniable fact, and the rejection of local astringents is amply justified as irrational, while the internal use of the much-vaunted chalybeates is considered useless.

Severe cases of pustular acne can be quickly and certainly cured only by following the same lines of treatment as are applicable to boils, *i.e.*, curetting or incising each lesion and carefully disinfecting its interior. Where this method is not available for boils, the old-fashioned poultice prepared with a 1 to 1,000 sublimate solution, or a four per cent. boric acid solution is useful. At night the boil may be dressed with a carbolic mercury plaster, or with equal parts of vaseline, zinc oxide, and four per cent. of boric acid. The writer has no faith in the reputed virtues of calcium sulphide in the prophylaxis or treatment of furunculosis, acne, and suppurating glands, and would place it side by side with what he terms that ludicrous specimen of therapeutic empiricism, viz., the treatment of amenorrhœa by pills of potassium permanganate.

HOW TO CURE ECZEMA.

We know that the information we are about to give will be eagerly accepted, because of the frequency with which the question is asked. Is was only the other day that a practitioner was overheard to inquire of a dermatologic friend, "What is the best thing to do for eczema?" Now, he might almost as well have asked, "What is the best treatment for disease of the skin?" since his question only excluded about two thirds of all cases. Eczema has an ever-present interest for the general practitioner, while it is to him that come the great majority of cases to be treated, and journals devoted to general medical topics are constantly disseminating knowledge for his guidance. In a recent issue of an exchange we find the following, which has already had a good start on its rounds, and will continue to be copied, we presume, until someone pauses to consider, as the editorial scissors are at work, that four drachms of salicylic acid to the ounce is rather strong treatment. Here is the prescription:

For Eczema with Abundant Desquamation.

(*Therapeutic Gazette.*)

℞. Salicylic acid..... gr. xv.
Oxide of zinc..... gr. xxx.
Vaseline..... gr. xxx.

Charity forces us to the conclusion that in the original an ounce of vaseline was written or intended.

Still in the same journal we find the following:

Pruriginous Eczema.

℞. Oxide of zinc, vaseline..... equal parts.

It may be well to incorporate with these, if pruritus is present, a little oil of peppermint or carbolic acid, in the proportion of 1 to 4.

This would make it appear that the zinc and vaseline in equal parts was intentional in the first prescription. But why call twenty-five per cent. carbolic acid "a little?" and in what forms of pruriginous eczema is pruritus likely to be absent?

The fact that there are so very many kinds of eczema, some depending on local, others on general, conditions; some sharply limited, while others extend over the entire surface; some simple, and others due to an association of etiological elements; renders any attempt to generalize as to the treatment of eczema a difficult, and usually a futile, task. Take, as an instance of a single regional division, eczema of the lips. Before we can enter upon a rule of treatment, we must further subdivide the subject into those forms which begin upon the skin proper, and those affecting primarily the vermilion border or mucous surface. Of the former we have the quite common eczema which appears beneath one or both of the nostrils, depends upon a discharge from them, simulates a sycosis, and is in all probability of parasitic nature. In such an instance the eczema is cured and recurrences prevented principally by treating the chronic coryza or other nasal trouble present. Another variety is that seen in infants, and attributed to a strumous diathesis. Here, certainly, remedies directed to the constitutional disorder form the appropriate treatment. Seborrhœal eczema of the lips,

whether beginning at the junction of the skin and mucous membrane, or affecting other parts primarily, constitutes a rebellious disease which may have to be combated with resorcine, sulphur, salicylic acid, citrine, or other ointment, for a long time, and may then not succumb without the aid of arsenic, cod-liver oil, or other internal agents.

Other forms of intensely itching dry and scaly labial eczema may be encountered, sometimes due to one cause and sometimes to another, and each particular case will have to be treated on its merits.

Marchand (*Thèse de Paris*) calls certain of these cases *Eczema de la Moustache*, which is not quite so bad as the term used by a well-known oculist of this city, who, in sending a patient to a skin specialist wrote: "I send you a case of moustachitis." Here again the question arises, shall the lip be shaved, or the hairs clipped short. Shaving will, as a rule, be found too painful, if there is much infiltration and inflammatory reaction, and, if carefully done with a sharp scissors, clipping will answer every purpose. Such hairs as are implicated in pustular formation can be epilated.

Besnier recommends complete epilation, followed by vapor douches, and continuous application of caoutchouc or rubber bound upon the lip, under which protection the irritation rapidly diminishes.

One of the most constantly praised applications in eczema of the upper lip is the Lassar paste, the composition of which is about as follows:

℞. Zinci oxidi,
Pulv. amyli..... .....āā gram. 10.
Vaseline..... gram. 20.
Acidi salicylici..... centig. 0.40

Dubreuilh omits the starch and adds about four grams of sulphur, from which combination he reports good results.

If the eczema is of the seborrhœal variety, attention must be paid to any existing pityriasis or seborrhœal eczema of the scalp; for, as Unna has shown, unless the disease located here be kept in abeyance, recurrences will continue to take place on other regions.

Enough has been said to show that there is no royal remedy, or even any general plan of treatment, for the cure of eczema, and as Besnier has well said: "He who will best treat eczema in general will be he who will analyze with the most solicitude and attention the conditions presented by each patient, and will know how to rectify his hygiene and correct whatever may be faulty in his organs or their functions.

When this lesson has been learned, a great deal will have been accomplished toward a knowledge of how to cure eczema.

THE INTERNAL TREATMENT OF PITYRIASIS VERSICOLOR.

It may seem strange to many that a disease whose etiology and therapy are so simple—a parasitic affection of the cutaneous covering, requiring only a few applications of iodine, sulphur, naphthol, or resorcin to remove all the lesions present—should require any internal treatment.

Such, however, appears not to be the case so far as two French physicians, De Molènes and Costilhes, are concerned. These gentlemen attempt to show, in an article published in the *Archives Générales de Médecine*, October, 1891, that unless internal treatment be combined with local applications the soil will remain the same, and internal disorders being left unchanged, the conditions predisposing to the implantation and development of the germ will often suffice to determine new attacks.

Among the disorders found associated with pityriasis versicolor, phthisis and dilatation of the stomach are most prominently mentioned.

It has been a common observation for many years that consumptives often acquire this disease, but this has usually been attributed to the fact of excessive sweating, keeping the skin soft, and in a condition favorable to germ growth.

Dilatation of the stomach has already been found in frequent association with a disease somewhat similar to that under discussion, to wit, pityriasis rosea.

In many non-parasitic skin diseases digestive disorders are well known to have the most important influence, and it seems not unreasonable to suppose with these gentlemen that parasitic ones may find more chance to spread where a defective elimination has reacted upon the emunctories of the skin. Here the surface becomes fatty and acid, two conditions favorable to the germination of parasites.

Before the Microsporon furfur was discovered, internal remedies were relied upon to effect a cure, while external applications held a very secondary position. This was because of the mistaken idea that the macula hepatica, as the lesion was then called, was due to liver derangement, or was dependent upon some stomach or blood disease.

The authors would not have us go back to a treatment based upon such erroneous views, but upon the fact that faulty digestion is a most fruitful source of the seborrhœal conditions so indispensable to the germs of pityriasis versicolor.

The cure of constipation and maintaining the whole digestive tract in as antiseptic a condition as possible are the chief aims of internal treatment as recommended.

After enumerating the many cathartics applicable to the various forms of constipation, the following formula is given, which has been found useful in the double *rôle* of antiseptic and laxative:

℞. Sodæ bicarb.,
Naphtol or salol.,
Magnes. calcin. ..... āā gram. 10.
To make thirty powders, one to be taken before each meal.

This, combined with such an external application as the following, recommended by Brocq, will be all sufficient to cure the attack and prevent recurrence:

℞. Acid. salicylic ..... gram. 2 to 3.
Sulphur precip..... gram. 10 to 15.
Lano"ini ..... gram. 70.
Vaseline ..... 18.

In this way the parasite is destroyed and the ground is rendered sterile.

A Boy Sentenced to Death in the Electric Chair.—A Brooklyn boy, only sixteen years old, has just been sentenced to death for murdering an infant.

News of the Week.

Dr. Charles Denison is a resident of Denver, Col., and not of New York, as stated in a previous article. We are sorry that he is not of New York after all.

A Correction.—Dr. E. B. Dench writes: "I beg to call your attention to an error which your reporter has made in the last issue of the MEDICAL RECORD (October 22d). In reporting, on p. 490, my remarks upon Dr. Knapp's paper, my name is given as F. E. D'Oench, and a similar mistake is made upon the same page under the remarks of Dr. Gruening at the end of the discussion. The error is not uncommonly made, but as the other gentleman might not care to be responsible for my remarks, I shall deem it a favor if you can correct the mistake."

Cholera and Quarantine.—At the last regular meeting of the Society of the Alumni of Bellevue Hospital, held at the Hotel Brunswick, Wednesday evening, November 2d, Dr. J. M. Byron read a paper on cholera in New York Harbor. It was discussed by Health Officer Jenkins, Drs. H. M. Biggs, and H. D. Chapin.

The Death of Dr. Frazer C. Fuller.—The following resolutions were adopted by the Medical Board of the City Hospital recently:

Whereas, It has pleased Almighty God to call our late associate, Dr. Frazer C. Fuller, from his field of labor in the City Hospital; and

Whereas, Dr. Fuller exemplified in his professional career the faithfulness and zeal that gave bright promise of future usefulness and distinction;

Resolved, That we, his associates in the City Hospital, express our sense of bereavement at his death.

Resolved, That we tender our sympathy to his family in their great affliction.

Resolved, That these resolutions be spread upon a special page of the minutes, and that a copy be sent to the family of the deceased, and to the medical journals of the city.

By the Committee.

T. H. ALLEN,
EDWARD S. PECK,
J. BLAKE WHITE.

Charity, Maternity, and Epileptic Hospitals, Blackwell's Island.—The Medical Board of the City Hospital has appointed Dr. D. H. McAlpin, of New York, curator, in the place of Dr. H. Biggs, resigned.

Digitalis and the Digitalins.—This much-studied subject has received some contributions from MM. Fouquet and Kiliani. M. Fouquet, in the *Bulletin Gén. de Thérap.*, publishes a study of the comparative value of the various commercial digitalins. He considers that crystallized digitalin, amorphous digitalin, and digitoxin, all possess the same degree of activity; and that these only ought to be employed in medicine, the crystallized digitalin receiving the preference. The best method of administration is as one large dose of one milligramme ($\frac{1}{66}$ of a grain) dissolved in a mixture of glycerine, rectified spirit, and distilled water. If necessary, half the dose may be given the next day, but it should then be discontinued on account of its cumulative action. M. Kiliani, in investigating a practically applicable method of preparing the really active principle of digitalis in a state of purity, has arrived at the following conclusions: 1. Besides digitoxin and the active substances, the different kinds of commercial digitalin hitherto known generally contain two perfectly amorphous glucosides. 2. The digitalin of Schmiedeberg is also a mixture; its action on the heart being probably due to the presence of a hitherto unseparated glucoside. 3. The digitalin of Schmiedeberg is, on the contrary, a distinctly individual substance, possessing in a marked degree the characteristic property of acting on the heart. The secondary cumulative effects of digitalis preparations is in all probability to be ascribed not to digitalin itself, but to those substances which are associated with it in the preparations of the drug which are generally used.—*The Pharm. Journ. and Trans.*, vol. li., p. 1061, 1892.

Changes in State Care of Lunatics.—The State Asylum for Insane Criminals at Auburn has been abandoned as an institution for lunatics, and its inmates transferred to the new asylum at Matteawan, near Fishkill-on-the-Hudson. By an official decision of Attorney-General Simon W. Rosendale, the Matteawan asylum has been entirely substituted for the old institution, which has ceased to exist legally, and commitments and transfers on "criminal orders" now apply to the new asylum. The Auburn institution was abandoned on account of insufficient capacity, and the State asylum at Matteawan has all the necessary qualifications for a modern hospital for the insane. It now contains nearly all of the "criminal insane" of the State. But the most important part of the recent changes on the part of the Commission in Lunacy is that referring to the separation of the criminal and non-criminal insane. The Matteawan institution has ample room for such a distinction, and the commission brings forward many sufficient reasons in its support.

The Treatment of Nocturnal Incontinence of Urine in Children.—Dr. Van Tienhoven (*Allg. Wiener Medical Zeitung*, 1890, No. 50) believes the exciting cause of nocturnal enuresis to be the incomplete closure of the prostatic urethra, during the general muscular relaxation of sleep. The urine collecting in the bladder soon finds its way into the urethral pouch, and gives rise, by its presence, to reflex detrusor spasm. To overcome this he advises elevation of the pelvis during sleep by means of a wooden frame, which raises the body to an angle of forty-five degrees. In this manner, he affirms, the urine is prevented from entering the posterior segment of the urethra.

A Home for the Dying.—There are homes for the aged, homes for the sick, homes for the blind and the deaf, homes for convalescents, and homes for the incurable, but the most unique and novel of all is a "Home for the Dying." This is the name of a London institution founded seven years ago by a Scotch lady. It has been so well patronized that it will be enlarged.

Intra-uterine Injection of Glycerine.—The injection of glycerine into the rectum has for some years been current in practice, and it is recognized in certain conditions to be a very convenient and efficient method of administering an enema. It strikes me as strange that a substance so efficient in emptying the rectum should until now have been put to comparatively few trials in empty-

ing the uterus of its contents, for *a priori* it seems a likely agent for this purpose. M. Pelzer records some observations made in the latter direction, and speaks favorably of intra-uterine injections of glycerine for the inducing of necessary premature labor as well as in cases of insufficient uterine contraction. His method of procedure is as follows: He takes a syringe of the capacity of one hundred and fifty grammes, or a little over four ounces, and, having filled it with pure glycerine, he attaches it, through the medium of a gutta-percha tube, to a perforated sound. Having cleared the apparatus of air in the usual way, he introduces it into the uterine cavity between the posterior wall and the membranes to the fundus of the organ. The glycerine is then injected and the pelvis elevated to prevent its too rapid escape. In a very brief space of time energetic contractions are set up. The effect of the glycerine is due in part to its mechanical action in separating the membranes from the uterine wall and in part to its chemical affinity for water, by virtue of which some of the amniotic liquid is abstracted, which in turn contributes to a further detaching of the membranes. On the whole M. Pelzer was pleased with his results and suggests glycerine as worthy a further trial in obstetric practice.—*Lancet.*

Sued for "Docking" a Horse.—At the suit of the Society for the Prevention of Cruelty to Animals, Dr. William M. Zuill, a professor in the Veterinary Department of the University of Pennsylvania, was fined by a magistrate $20 for "docking" the tail of a carriage-horse by request of the owner.

A Profession where there is More Room.—Frau Gelly enjoys the probably unique distinction of being the only person engaged in her occupation. Nearly every medical visitor to Vienna within the last ten years will remember her. She is employed as a nurse in Schnitzler's throat clinic in the general hospital and acts as an assistant instructor; but her forte lies in hiring herself out to medical men as a subject upon which to practise laryngology and rhinology. She comes to your rooms by appointment and brings all her own instruments. If you are a beginner, she explains the proper position for patient and physician, the adjustment of the forehead reflector, and the introduction of the throat mirror. Her throat is so insensitive that even the most awkward manipulations produce no gagging or other reflexes. She is able to tell whether the throat mirror is in correct position and to guide your hand so that you *must* see the vocal cords. She next points out with a probe the different structures to be seen. The next step is for the student to paint the larynx with some bland solution, and after that to touch the different parts with the probe as if applying a solid caustic. When you have become quite expert she introduces a glass bead so that it rests on one vocal cord and lets you remove it with Schrötter's forceps. The amount of confidence she has in your dexterity is indicated by the fact that she keeps a very tight hold of a thread attached to the bead. Passing on to the nose, you are given practice in making applications with a brush or probe to the different fossæ, in passing a catheter into the Eustachian tube, and in posterior rhinoscopy. It gave me a very queer sensation the first time I saw her introduce the Eustachian catheter herself. Frau Gelly has the reputation of being crafty. At the first lesson you cannot help seeing every portion of the larynx, but as you become more expert she makes it more and more difficult, until finally she is worse than the most refractory dispensary patient. Her object is apparently to show you the necessity for an indefinite continuance of the sittings. But it is just at this point that most men stop. Last year an American physician was working in Vienna on a modification (not yet published, I believe) of O'Dwyer's tubes, and during his experiments he intubated Frau Gelly's larynx a thousand times. She receives about eighty cents an hour, and is harder to make an appointment with than Professor Billroth. When she does make an appointment she never intends to keep it, but makes her appearance a week or two later. Why should not New York produce a Frau Gelly? There are students enough in the post-graduate medical schools to render the occupation profitable, if not agreeable.—Dr. S. Tousey in *New York Medical Journal.*

The Fresh Thyroid Gland as a Food.—A case of myxœdema, in London, is now under a curious treatment. The patient is a woman, aged forty, who for nearly three years has been under treatment for myxœdema. In every respect it is an extremely typical case; persistently subnormal temperature, general swelling of the integuments, dryness of skin, partial baldness, clumsiness of movement, slowness and thickness of speech, etc. The patient was admitted to the hospital in July, under the care of Dr. Hector Mackenzie, for the third time, in order to be treated by hypodermic injections of thyroid juice. In consequence of the difficulty experienced in obtaining the latter Dr. Mackenzie was induced to try the effect of feeding the patient on fresh thyroid glands. The result has been a very striking improvement. The myxœdematous swelling has entirely disappeared, the temperature has become steadily normal, the skin moist, and the speech natural. The patient asserts that she feels perfectly well.

The Parasitic Origin of Cancer.—In the August number of the *Annales de l'Institut Pasteur* M. J. Soudakewitch continues his account of his observations on intracellular parasitism in cancerous new growths. He strongly combats the idea brought forward by Professor Virchow that the parasites described by recent observers have little to do with the etiology of cancer. He still maintains that the structures he describes in the cancer-cells are true parasites; that by certain features they may be distinguished from various degenerated products and altered cells; he has now been able to see falciform bodies within these parasitic cysts. He has noted the division of the body into a larger number of smaller bodies, and he has found these smaller bodies increasing in size, ultimately forming groups of the larger organisms contained in a large mass of protoplasm. In the one hundred and ten cases he has now examined he has always obtained the same results. He thinks that the young parasite passes into the substance of the cell; that there it grows slowly; that the capsule that surrounds it becomes more and more marked; that the nucleus is gradually compressed until it takes the form of a flattened layer around the capsule, to which it is closely applied; the protoplasm of the cell is also gradually distended, becomes more homogeneous,

is not so brilliantly stained, and ultimately may form only a thin membrane around the parasite. The parasite is then set free, its contents become divided into what may be termed "spores," and these make their way into the neighboring cells, when the process recommences, so that a single cancer-cell may give rise to the contamination of a considerable number of those cells around it. He also holds, however, that the cell containing the cancer parasite may divide, and that the parasite may divide along with it, both of the resulting cells being thus infested. He does not, however, seem to take into account that these parasites as they grow must give off effete matter, which probably may have a most important influence in determining the proliferation of the epithelial cells in the immediate neighborhood, and that therefore it is not to be expected that one of these parasites would be found in every cancer-cell. These and other recent observations on cancer open up a new line of research, and one that promises to give us some new light on the etiology of this fell disease.

A Doctor Injured by the Trolley.—On October 26th, Dr. J. T. Whittaker, of Cincinnati, while driving beneath some overhead trolley wires, was struck by one of the wires falling into his carriage. Fortunately the doctor escaped with but slight injury, and in a short time was able to attend to his ordinary duties. This accident, along with others of the same kind, emphasizes the great danger of these overhead wires, and suggest proper means of precaution being taken. This is a feature of rapid transit that requires careful regulation.—*Cincinnati Lancet-Clinic.*

New York Physicians Have the Right of Way in accordance with the following city ordinance:

"SECTION 1.—Section 1 of Article I. of Chapter VIII. of the Revised Ordinances of 1880 is hereby amended by adding thereto at the end thereof the following words, to wit: Physicians having a police permit, as hereinafter provided for, shall also have a like right of way in the streets, and shall be allowed to cross processions as soon as possible, when answering calls for their services. The Superintendent of Police is hereby empowered to issue, upon application therefor, a proper permit to any duly registered physician, and this permit shall not be transferable."

Running Down the Quacks.—It is now about fifteen years since the Medical Society of the County of New York began a crusade against quacks. It went to work at first in a small way, with very little favorable legislation behind it and rather crude methods of carrying out its purpose, but little by little it has gained strength until it now has undertaken the task of keeping quack doctors out of the city. About two years after the County Medical Society began this sort of work the State Dental Association joined the hunt, and now both societies are in it hand-in-glove to rid the town of illegal practitioners. There is no scarcity of detectives. Most of them are women, and often they serve both societies. There is one, Miss Bertha S——, who has done well in both lines. Miss S—— is a pretty, innocent-looking German girl, but she knows almost enough medicine to be a doctor, and she has one molar with a large cavity. To the Medical Society she was invaluable. There were few diseases Bertha couldn't have. She knew the symptoms of almost all of them and described them glibly. Then the quack told Bertha what ailed her with more or less accuracy, and gave her some medicine, to be arrested next day on Bertha's complaint and fined from $50 to $200. In a dental way Miss S—— was very useful, and all on one tooth. She let one quack put cement in it; then she had him arrested. Then she went around the corner a day or so afterward and let quack number two change the cement for amalgam filling. This cost quack number two $50. Quack the third paid a similar sum for changing the amalgam filling for gold, and then an officer of the Dental Society unfilled Bertha's tooth and it was ready for business again. . . . Bertha almost cleaned out Brooklyn for the society, but at last she came to be known and some of the quacks refused to treat her.

Does a Moderate Use of Opium Shorten Human Life?—This was the question which a gentleman has just asked of several Life Assurance Companies for a satisfactory reply. The answer has come, as was naturally to be expected, decidedly in the negative. What do the "opium agitators" say to this? Are the Life Assurance Companies in a secret conspiracy with the Indian Government?—*Calcutta Medical Reporter.*

"Criminal Abortion among Some of our Respectable Married Ladies."—Under this title Dr. W. T. Kendall, of Meridian, Miss., makes some statements (*Mississippi Medical Monthly*) which show that a repugnance to maternity prevails in Mississippi as well as elsewhere. After citing a case in which a woman had injected two drachms of pennyroyal into the uterus without much effect, except to cause a colic, he gives some instances of the ways and means used in his locality to prevent childbearing: "A lady told me," he says, "she never intended to give birth to a child at full term. She said as soon as she was satisfied that conception had taken place, she would take two tablespoonfuls of oil of turpentine, and it would invariably produce abortion in her case, and that she had resorted to it on several occasions—would take one tablespoonful of oil of turpentine and repeat the dose in about three or four hours—the second dose always produced the desired effect. The third lady produced abortion by introducing a knitting-needle and puncturing the membrane. Another introduced a male catheter into the uterine cavity attached to a Davidson syringe and pumped a good deal of warm water into the uterus, which produced the desired effect. Some have learned the effect of tea made from gossypium root. I think our ladies of to day are surpassing the female slaves before the late war in the art of producing abortion. The negroes before the war would frequently object to bearing children and would resort to the use of cotton-root tea to produce abortion, which it invariably did. The first case I ever saw was a negro girl, eighteen years of age, who had taken a large quantity of cotton root tea to produce abortion, which she effectually did. When I arrived at her cabin I found her in the throes of the most violent convulsions I ever witnessed, and it was some time before I found out, through an old negress on the place, what caused the convulsions. I have known ladies to take large doses of double tansy, camphor, and many other remedies in astonishingly large doses."

Clinical Department.

SOME OBSERVATIONS OF CANCER OF THE BREAST.

By GEORGE F. SHRADY, M.D.,

NEW YORK.

THE question as to when a breast should be amputated for removal of malignant disease almost answers itself in the mind of every practical surgeon. The rule is, the sooner the better. But it is well known that we do not, save in a small minority of cases, see the disease sufficiently early to give us the best chances for success. The patient on first accidentally discovering a "lump" in her breast broods over her horror in secret and rarely consults her most intimate friends. She apparently shrinks from sharing her confidence, in the belief that even the members of her family will shun her as one having an incurable and loathsome disease. It is for these reasons that the surgeon does not see the disease in its incipiency and oftentimes not until it has passed the border-line of expediency as to operative interference. Whether to operate or not in a given case under such circumstances, with any reasonable hope of guarding against a recurrence, becomes to him a serious question.

Each operator is led by his individual experience to formulate his own rules. With his best judgment he is often inclined to expect too much, even though he is confident he can perform a thorough operation. There are always so many points to consider in reference to even a fair prognosis that he is inclined to give the individual the benefit of every doubt and virtually hope against hope. There is no rule to be laid down as to the rapidity of progress or as to time or possibility of recurrence in any particular patient. The safer way is never to promise anything further than that you will do your best to thoroughly eradicate the disease.

There are, however, general considerations which are hardly necessary to premise, which may aid us in the discussion of those cases in which we must draw the line when not to operate. Generally speaking, I am in favor of operating, even against apparent odds, so long as there is a chance of getting safely beyond the infiltrating area of the disease. While, save with the microscope, there is no way of positively determining the limit of infection we are oftentimes encouraged by ultimate success in the performance of most extensive operations with such an end in view.

It should be borne in mind in this connection that, although cancer is essensially an infiltrating disease, its focus of malignity is at its place of origin and but a comparatively slight distance around it, save when it invades the line of the lymphatics immediately connected with the original growth. The lymphatics being the direct lines of extension it does not by any means follow that all the surrounding tissues in their neighborhood and throughout their course are equally involved. This fact is often enough proven by noting the way in which recurrences take place. Exactly how much of the overlying and contiguous tissue shall be removed with the growth is a matter of judgment with the operator.

In estimating the chances of recurrence it is always well to bear in mind the very important part which the neighboring lymphatics bear to the cancerous mass. If a reasonably wide margin of skin and subcutaneous tissue is included in the extirpation it is safe to assume that the lymphatics are almost solely responsible for the subsequent spread of the trouble. This brings us to consider exactly what a radical operation means. In the first place, the entire gland—including, of course, the nipple and the usual elliptical enclosure of skin tissues—must always be removed. It has been shown over and over again, by the most careful microscopical examination, that when any part of the mamma is cancerous the remaining portions are sure to show some sign of degenerative cell-proliferation in varying degrees of progress. Not only is such a condition manifest in the cellular elements, but there are also unmistakable signs of reproductive activity in the periacinous connective tissue, which becomes infiltrated with small rounded cells.

It has been a question with many surgeons as to the practicability of always clearing the axilla as a necessary part of the radical operation. My own experience has led me to believe that it is always best in the first operation to be as sure as possible that all the glands in the axilla and neighborhood are removed. We should never be satisfied to complete an operation before, at least, examining the open axilla for enlarged and infected glands and giving the benefit of any possible doubt to the radical procedure. In fact, it is always best to make a thorough dissection, not only of the main axillary line of the lymphatics but its connections with the subscapular and subpectoral groups.

When such indications are properly fulfilled the operation becomes complicated with the dangers of wounding the axillary vessels and nerves and requires the utmost patience, care, and skill to carry it safely through. But there must be no compromise when once the thorough eradication of every suspicious kernel is determined upon. The failure to do this oftener explains a recurrence than anything else. Its demonstration is the subsequent enlargement of a neglected axillary gland imbedded in cicatricial tissue and in a situation more difficult than ever to reach in any secondary operation.

It is not the purpose in these comments to go into detail regarding the technique of the radical operation, as this is too well understood to need special reference. As a rule, I always clean out the axilla as a necessary part of every operation, and I have never had reason to regret so doing. Nor have I met with any accident that in the end compromised the life of the patient. With care neither nerves nor vessels need be wounded nor impaired usefulness of the arm result. Of course, when the pectoral muscles are cut away the motions of the limb become quite limited. Such a procedure, however, is in most cases unwarrantable, as there is not enough to be gained, considering the extension of the disease, to offset the chances of a speedy recurrence.

It goes without the saying that there must be no mistake in the diagnosis. That this is possible every surgeon knows. Several instances have occurred in my experience in which innocent tumors were christened malignant and in which the breast was condemned to amputation on account of simple growths, and also in consequence of deeply imbedded and firmly distended cysts. In one recent instance immediate amputation of the breast was advised by three very competent practitioners. The patient carried the tumor five years after that, at the end of which time I extirpated a large cyst and saved her breast. These cases are necessarily out of the category of recurrence. While it is fair to assume that every chronic tumor in the breast of a lady who is past forty years of age should be carefully scrutinized, we must not advise an operation too hastily. There are many varieties of breast tumors which are innocent in character and are sometimes difficult of diagnosis. Fortunately, there is always time enough in suspicious cases to study the character of the growth thoroughly before coming to a conclusion. In cases of reasonable doubt there is always a final chance of saving the breast by an exploratory operation.

While it is proper to take the most desperate chances with some hope, we have to consider another class in which the surgeon not only wisely hesitates but refuses to operate. In the experience at the New York Cancer Hospital, which in cases of cancer of the breast is exceptionally large, it is the rule not to operate when there is a continuous chain of lymphatic infiltration under the pectoralis minor and into the supraclavicular space. In times past I have attempted extirpation in several instances, and in one bisected the clavicle for the purpose, but invariably

there was a recurrence, either along the tracheal or cervical lymphatics.

Tumors which commence on the inner or sternal margin of the mamma are always in my experience less promising than those upon the outer portions. The anatomical explanation for this is in the arrangement of the lymphatics in that neighborhood and their connection with those of the mediastinal space. If there is any evidence of involvement in that direction, all operative interference is necessarily contraindicated. It is sometimes quite difficult to determine how much the axilla is infiltrated. The size of the tumor does not always demonstrate its absolute depth, but generally when the arm is œdematous the chances for operative relief are gone. Usually when the disease has gone thus far the supraclavicular glands are doomed, and the axillary vessels are hopelessly imbedded in diseased tissues.

There is a class of cases which is peculiarly obnoxious to operation and in which such a procedure should never be advised. This comprises the rapid infiltrating growths that appear to invade the entire breast, giving the organ an even, hardened enlargement with œdematous pitted surface resembling the rind of an orange. Although the disease appears to be sharply limited to the breast-tissues, the neighboring parts for a great distance around are always filled with active proliferating processes. Whenever operations are performed under such conditions the cases are sure to do badly, oftentimes the recurrence appearing before the necessarily large open wound is closed.

It is also unwise to interfere with the atrophic form of carcinoma as it occurs in elderly persons. While unmolested it is perfectly safe to leave it and take the exceptional chance of extension; an operation is almost sure to bring about a retaliation in the shape of a relighting of the disease with an attendant increase of malignancy. In this latter respect the results of operation are contrary to the rule when cases are judiciously selected. It is very properly held that recurrences after operations are generally less malignant than the original growths, and this is true even with repeated recurrences, provided the disease is restricted to a limited area.

It must often occur to the practitioner that there are at times different degrees of activity in cancerous growths which should be carefully considered in connection with the advisability of an operation. When active local infiltration is progressing it is best to wait until the parts become quiescent. The older writers speak of this as the inflammatory period, but modern pathology has given us a better explanation. In reality this condition means a new invasion of surrounding tissue, the involvement of new glands, and a new extension of infiltration.

The time has gone by for discussion as to the advisability of operations in properly selected cases. Statistics have proven that life is always prolonged, even when recurrence takes place. There is an average of a year of life in favor of operation, with a promise of less malignancy in recurrent attacks. But, best of all, some cases are absolutely cured, even after repeated operations.

8 East Sixty-sixth Street.

It Would be Instructive.—"There is one thing which patent-medicine vendors might do," says an exchange, "that would make even greater demands upon newspaper space, and that is to publish cuts of those who have tried their medicines, and died." Here is a valuable suggestion, that we would commend to the serious consideration of any new firm of cancer or catarrh "specialists" intent on driving older rivals from the field.

An Elderly Lady and a Large Baby.—Dr. E. E. Collins, in the *Nashville Journal of Medicine and Surgery*, reports the case of a woman, aged forty-three, whom he was called to attend in her thirteenth confinement. The labor ended in thirty hours; the baby, a girl, weighed 16½ pounds, the mother weighed 240 pounds, the father 289 pounds; total, 545½ pounds.

A SMALL ALLOWANCE OF WATER PER DIEM.

By THOMAS C. CRAIG, M.D.,

Passed Assistant Surgeon, U. S. N.

On August 26, 1892, the American ship William A. Campbell, was wrecked by a cyclone about twenty-three hundred miles southeast of Hilo, Hawaiian Islands. The same day the captain and crew abandoned the ship in two small boats; the larger boat being in charge of the captain and having eleven men, while the smaller one, an eighteen-foot boat, was in charge of the first mate, with ten men. They had provisions and water for twenty days, it being, of course, the intention to put each one on the smallest quantity that would possibly sustain life. Only one boat—that in charge of the mate—reached shore; and when it is remembered that an eighteen-foot boat, with eleven men, sailed the open sea for a distance of twenty-three hundred miles, it becomes perfectly marvellous to know how they managed to keep alive. There was no rain during the twenty-four days, consequently their only supply of fresh water was what they took with them from the ship.

The day they left the ship, the mate calculated that it would take twenty days to reach Hilo, and that only half a condensed milk-can of water (about six ounces) per diem could be allowed per man. Of hard-tack, canned meats and fruit they had enough for twenty-five or thirty days. For the first five or six days they were quite comfortable; in addition to the hard tack and water a two-pound can of fruit was daily equally divided among all, but at the end of that time, the fruit being all used, nothing was left except the water, hard tack, and the canned meat, and the latter was so salty that it was eaten with great difficulty. The constant crave during the whole time was for water. Some of the more reckless ones would drink their whole allowance at once, while the more thoughtful ones would merely moisten the lips and tongue, swallowing perhaps a teaspoonful; they would thus extend their allowance nearly the whole day. These were the ones who withstood the suffering best.

The most distressing symptoms were first a dryness of the mouth, with secretion of thick, tenacious saliva; then followed dryness of the fauces and pharynx, inability to swallow, and pain of an acute character in the throat; this pain would become so intense as almost to be unbearable. At the end of the sixteenth day the canned meat was all consumed, and nothing was left except the hard-tack and water.

At the end of the nineteenth day the water was all used and nothing remained except hard-tack. It was then found that they could not eat the hard tack, because it was so dry that it could not be swallowed. Dipping it in the sea-water and then eating it was tried, but it was discovered that the sea-water only tended to aggravate their thirst. Thus it was that for the last five days they had no water to drink, and were unable to eat the hard-tack they had. They gave up hope of reaching land, their strength failed them, they emaciated and became desperate and reckless. They had not room enough to lie down, and what little sleep they had was troubled with dreams of cold flowing springs, ice-cream, iced water, and all kinds of cold drinks. Although they were within the tropics, under a hot broiling sun, they perspired very little. Notwithstanding the small amount of water taken the amount of urine voided was about the normal quantity; this statement being told me by the mate. The bowels were extremely constipated in some, the worst case having but two passages in twenty-four days.

Scurvy attacked most of them; their gums swelled and became very tender, their feet, legs, and hands were more or less swollen; a purpuric eruption appeared, covering nearly the whole body, while in many places the skin ulcerated deeply. Their thirst became so intense that they began drinking their urine. One, not being able to pass enough urine to satisfy his craving, begged and obtained

an additional quantity from one of his friends. Toward the last part of their journey nearly all of them had become so exhausted that they were perfectly indifferent as to whether they reached land or not. They were rescued by some fishermen near Hilo. The fishermen knew enough to give them only a small quantity of water and fruit at a time during the first day. In several days, under good nutritious food, they recovered their strength, and are now being treated for their scorbutic condition.

Had even the small allowance of water lasted until the end of their journey they feel confident that they would have reached land in good health Bathing the head, body, and extremities with sea-water was tried, in the hope that enough would be absorbed to allay thirst in a measure, but it was found to do no good and was discontinued.

I have written the foregoing meagre report merely to call attention to the small quantity of water that is absolutely necessary to sustain life in a crisis.

October 3, 1892

CHEWING-GUM IN FEVERS.

Dr. R. I. Bond, of Hartshorne, I. T., writes: "The salivary glands play quite an important part in continued fevers, yet they are not considered in the treatment of the case. One of the first and most important restrictions in the patient's dietary is to drop all solid food from the list at the physician's first request, and just then the salivary glands begin to lapse into a torpid condition which very often results in an inflammation and, finally, suppuration, and that disagreeable dryness to the tongue and fauces so uncomfortable to the patient. For the relief of this trouble I have found nothing of so much importance as some nice form of aromatic chewing-gum, which relieves the thirst and dry mouth, improves the appetite and digestion, and restrains nausea, if any. Hence some of the most disagreeable accompaniments of the disease are mitigated. I believe also that it materially aids the absorption of the medicine when the alimentary tract is so impaired by the incessant fever.

"I do not claim originality in this treatment, although I have never found any reference to anything of the kind. However, it may have been regarded as too simple to need mention; still it is, in my estimation, quite important in any continued fever."

THE ESSENTIALS OF A GOOD STETHOSCOPE.

By C. B. LONGENECKER, M.D.,

PHILADELPHIA, PA.

A stethoscope may be regarded either as an instrument of convenience, or else an instrument which has for its prime object the conduction of sound to aid the hearing. If the former, errors of omission or commission by the maker may be pardoned. But, if the latter, anything that retards or prevents conduction of sound is a detriment, and insomuch as the maker fails to avail himself of good principles of construction just to that extent does the stethoscope fail to be the most efficient instrument for which it is intended.

In the Medical Record for October 22d Dr. Charles Denison has an article under the above heading, and many of his points are well taken, especially the one in regard to large calibre of tubes for the conveyance of sound.

I possess a Cammann binaural stethoscope, made by one of the best makers in New York, and supposed to be up to date in construction. After reading Dr. Denison's article I examined it to see if any of the faults he described were present. It did not take a very extended search to find some of them. One chief fault was the small calibre of the holes in the rubber parts and brass tubes. Another was that the woven covering of the flexible tubes had frayed out before being put together, and this partly occluded the openings.

The test that Dr. Denison describes was used in determining efficiency, viz.: placing the watch on the table, covering it with one hand, and applying the stethoscope to the back of the hand. The result was not very good. I then enlarged the holes in the rubber parts as large as could be without weakening them. This was considerable. I also removed the fringes, and rounded over some corners in the brass work. Of course it was not possible to enlarge the brass tubes.

After cleaning and putting together, the test was again applied. It was astonishing to note the difference, and the intensity of the sound was increased by fully one-half, if not more. It is hardly necessary to add that this result was extremely gratifying, as it increases the efficiency and range of the instrument by just that amount, which is not a trivial thing.

This plainly demonstrates that the calibre of tubes, smoothness, freedom from projecting angles, etc., have much to do in conveyance of sound in the stethoscope. If the makers would take heed to this simple point it would result in a more efficient instrument, to the great benefit of all who use this convenient aid to diagnosis.

Meanwhile, let the possessors of stethoscopes take them to a mechanic and have their internals curetted, and some of the strictures enlarged, and they will find themselves possessing a decidedly more efficient instrument.

3501 Hamilton Street.

SCORBUTUS IN INFANCY.

By JAMES McMANUS, M.D.,

ASSOCIATE ATTENDING PHYSICIAN NORWEGIAN HOSPITAL, BROOKLYN, N. Y.

I was called in September, 1890, to a child, W. M——, aged twenty months, bottle-fed, who had been having a diarrhœa for some weeks. The child had only a few teeth, and there were besides other marked evidences of rickets. The diarrhœic stools were of a dark grumous character, there were ecchymotic spots over the lower extremities, and on the right leg, midway between the knee and ankle, there was apparently a bruise, which was tender; the mother denied that the child had received a bruise. The gums were swollen and bled readily on slight pressure. The child had been fed upon condensed milk alone, which it devoured ravenously and occasionally vomited. I gave it calomel, bismuth, and lacto-peptine; ordered fresh cow's milk, beef-tea, orange-juice, and lemonade, and at my third visit, one week later, all the scorbutic symptoms had disappeared. After that it was put upon appropriate treatment for rickets, which now, happily, it has recovered from. I am impelled to write this from reading the interesting case reported recently in the Medical Record by Dr. Walter Lester Carr.

VITILIGO IN A NEGRO.

Dr. D. A. Richardson, of Shelton, Conn, writes: "In the Medical Record for September 24th, Dr. A. B. Holder says of vitiligo: 'The two most extensive cases I have seen in any race are on this [Crow] reservation.' If Dr. Holder will communicate with his neighbor, H. C. Dunavant, M.D., of Osceola, Ark., he will receive evidence to corroborate the following:

"Henry W——, a negro, about fifty or sixty years of age, died during 1885 or 1886 from retention of urine. He was at the time of his death white, with the exception of a ring of brown a quarter inch in diameter about the urethral orifice, and a few spots ranging from the size of a pin-head to a maximum of two inches. The hair was wavy. His children, who were black and born of a black mother, told me that he had been within their memory as black as themselves and his hair as curly as theirs. I think this case must have been as extensive as that of Hits on the Hip."

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, October 27, 1892.

ROBERT A. MURRAY, M.D., CHAIRMAN.

Adhesion of Nymphæ after Labor.—DR. BROOKS H. WELLS related a case of a woman who, some time after having given birth to a child, complained of certain symptoms which led to vaginal examination, when he found the edges of the labia minora or nymphæ grown together. They were divided by the knife under the influence of cocaine. There was also some erosion of the cervix. Before childbirth coitus had been satisfactory. Afterward, entrance was effected only after repeated trials, and the husband, thinking the wife cared nothing for him, sought a divorce.

Sarcoma of the Uterus.—DR. C. D. JONES presented a uterus, the seat of sarcoma. The organ was enlarged to the size of a pear; the appendages were also pathological and were removed. He also presented the same organs from another patient, the seat of malignant disease.

Case of Instruments for Transfusion.—DR. H. J. GARRIGUES presented his case of instruments for transfusion, either of blood or saline solutions. He also presented a symphyseotomy knife, and the Chairman said this form of knife had been used in the first case of symphyseotomy operated upon in this country. It occurred in New York a short time ago. Since then the operation had likewise been done successfully in two cases in Philadelphia.

Induction of Labor by the Introduction of Glycerine.—DR. J. CLIFTON EDGAR presented a syringe with tube connection for the introduction of sterilized glycerine into the uterus in cases of pelvic deformity or other conditions demanding the induction of premature labor. The advantage of this method over the catheter was that it acted more quickly. He had had occasion to use it in one case only, and in that one the pains began within two hours. The method was now being much used in Europe.

Reprehensible, Unnecessary, and Necessary Antiseptic Midwifery.—DR. H. J. GARRIGUES read a paper with this title. In the way of reprehensible midwifery he alluded to the custom in an institution in St. Petersburg, thirty years ago, of washing out the uterus in every case with a solution of chloride of lime. Recently a Frenchman writes that he uses a solution of 1 to 2,000 of corrosive sublimate for washing out the vagina twice daily some weeks before delivery. In the last week, however, he introduces an iodoform tampon. It was unnecessary to say that this custom was reprehensible. Whenever corrosive sublimate was used at all it should not be stronger than 1 to 5,000.

By way of illustrating antiseptic midwifery he contrasted the results of the practice in the New York Maternity Hospital and in other similar institutions, of recent years, with those obtained before such antiseptic methods were introduced. In the New York Maternity, during the nine years, 1875 to 1883, out of 3,504 women confined 146 died. During the first year after the adoption of the new method, in 1883, out of 102 deliveries there was no death. Since 1883 there had been 3,170 confinements with a mortality of only thirty. Could they change the conditions existing in the Maternity as they would desire even this low mortality might be reduced, as it had been in some continental institutions and in the Sloan Maternity, where more or less similar antiseptic methods were employed. About the only change in antiseptics which they had made at the New York Maternity from what they had employed for a number of years was to substitute creolin for corrosive sublimate in vaginal and intra-uterine injections. He now used one per cent. solution creolin instead of two, as the latter strength was irritating to some patients. Creolin possessed the very valuable qualities of being lubricant, antiseptic, and hæmostatic, besides being so innoxious that it could be taken internally in large doses without causing disturbance.

It was a question whether some of their minor practices might not be dispensed with. For instance, when he was last on duty at the Maternity he did not give ergot, and saw no disadvantage from it.

The question whether it was advisable to give a vaginal injection or injections before labor, was still being agitated, some authorities advocating the practice and others disapproving of it.

Dr. Garrigues thought it well to give a single injection, but that repetition of it might lead to harm by softening and carrying away the epithelium. He was opposed to rubbing and scraping the vagina.

After birth of the child no uterine injections should be made unless it had been necessary to introduce the hand. An antiseptic bandage should be applied over the vulva after delivery. Its deodorizing quality insured sweet air in a ward even where there were many women.

Some obstetricians at present went so far as not to permit even of a vaginal examination in apparently normal cases. The author thought this was going to extremes, and prevented knowledge of the condition of the parts and the progress of the case which the attendant should have. With antiseptic precautions it should not endanger sepsis. The nurse, however, should not make vaginal examinations. Any instruments used should be boiled and rendered strictly aseptic.

Failure to carry out these antiseptic practices by physicians generally had led to a reversal of the old rule, and made it safer to the mother to be delivered in an institution than at home with the family physician attending. He therefore closed his paper with the motion, which was later adopted, that in the opinion of the Section it was the duty of every physician to surround his cases with the same safeguards as were being used in hospitals.

The paper was discussed by Drs. Grandin, Malcolm McLean, Collyer, Vineberg, Agramonte, the Chairman, and the author. There was no difference of opinions in the essentials of cleanliness.

Movable Kidney.—DR. GEORGE M. EDEBOHLS read the second paper on this subject. In view of the fact that movable kidneys had been treated for more or less the past dozen years by different authors, it was astonishing how little was known about it by most gynecologists. The condition was, in the majority of instances, one of the easiest to diagnosticate. But when it came to treatment he had found little satisfaction until he began, in the severer cases, such as called for radical treatment, to perform nephrorrhaphy in a manner which he described later; movable kidney existed in about one of every six gynæcological cases, but not all producing symptoms. One must determine in a given case what of the symptoms were caused by the movable kidney, and what by other abnormal conditions, especially of the genitalia. As to causes, some had laid stress on tight lacing, but the author had found a snugly fitting corset give most relief. The chief cause, in his opinion, was absorption of the supra-renal fat. The condition might develop suddenly, but doubtless usually required months or years. The path of dislocation varied, and might be in any direction after the arc reached ten or twelve centimetres. It seemed much more common in women than in men, he having seen it in but two men. The suffering in the early stages was apt to be worst. There was a difference of opinion as to the mode of causation of the digestive and other symptoms, the author's own view being that they were caused by traction upon and irritation of the solar plexus of nerves—the sympathetic abdominal centre. As to prognosis, when the kidney once became movable it never again became firmly fixed, although the mobility might be lessened by deposit of fat.

Dr. Edebohls had performed nephrorrhaphy eleven

times, with one death. Death was due in the one case presumably to diphtheritic peritonitis from germs in his own throat, as afterward a cold which he had, slight at the time of the operation, was said to be diphtheritic. He had seen hæmaturia or albuminuria after the operation in only one case.

Nephrorrhaphy alone, or supplemented by operations upon the genital tract, had cured his patients of their symptoms. In one the left kidney afterward became also dislocated and caused a return of the symptoms, but when the patient took on more fat she became more comfortable.

Dr. W. Gill Wylie thought movable kidney due largely to imperfect development and enervating modes of life, and was apt to be accompanied by relaxation of attachments and displacement of other abdominal and pelvic organs. Tight lacing was a cause, although later the patient might feel some relief from a firm corset.

Dr. Boldt had not found movable kidney so frequently, and thought the author had drawn a more definite picture of the symptoms to be ascribed to the displacement than clinical facts would perhaps justify. That traumatism could produce the condition was proven by one of his cases.

Dr. Robert T. Morris said movable kidney was much more common in women than in men. Tight lacing in girls pressed the liver, etc., downward, and tended to cause displacement of the kidney; yet, short of an operation, nothing gave as much relief as a snugly fitting corset applied while on the back.

Dr. Collyer thought displacement of the abdominal viscera much more common than was generally supposed, and due largely to lack of assimilation.

New Instruments.

SOME PRACTICAL USES OF THE OPHTHALMOMETER OF JAVAL-SCHIOTZ.[1]

By F. B. EATON, M.D.,

PROFESSOR OF OPHTHALMOLOGY AND OTOLOGY, MEDICAL DEPARTMENT, OREGON STATE UNIVERSITY, PORTLAND, ORE.

What are the practical advantages of this instrument? Like all other apparatus of novel use, it was at first misunderstood, and condemned by those who had not the skill or patience to make it useful; yet it is not at all difficult to manipulate. I remember that, on my return from Europe three years ago, I asked the chief of clinic of a well-known New York oculist what he thought of it. He said the clinic had possessed one for some time, but that it was of no practical use, and had been put away. Yet it had been employed daily by Dr. Swan Burnett, of Washington, with great success for a considerable period, and he had carefully explained the manner of manipulating it. Now, few oculists who can afford it, would willingly be without it. Landolt,[2] referring to this instrument says: "These instruments may render service when the dioptric system of the eye is reduced to the cornea alone, in aphakia. But in an immense majority of cases the determination of the curvature of the cornea is far from sufficient to acquaint us with the amount of astigmatism." Later clinical experience of many observers proves that the above statement is incorrect, for, on the contrary, it is known now that in the great majority of cases, all but one-half of one diopter of the astigmatism is caused by unequal corneal curvature.

The use of this apparatus is well nigh indispensable in determining the astigmatism of the very young, the illiterate, the dull, and the amblyopic patient. On a number of occasions I have quickly and correctly measured the astigmatism of so high a grade that the ordinary tests by test-type, radiating lines, etc., had failed in the hands of others to detect the condition, or the eye had been pronounced incurably amblyopic; while the ophthalmometer had enabled me quickly to pick out the strong cylinder which gave normal or nearly normal vision.

One of the uses of the instrument is to detect spurious astigmatism, caused by unequal contraction of the ciliary muscle, which renders the lens more convex in one meridian than another. We can prove this by putting weak cylindrical lenses before a normal eye, which will often, by its ciliary muscle, correct the artificial astigmatism so produced. But the great proof was afforded by the experiments of Dobrolsky, who completely paralyzed the ciliary muscle of certain eyes by the prolonged use of atropia, when regular astigmatism was found, although there was no sign of it before. The atropia could not affect the cornea, and the astigmatism which really existed was neutralized and corrected by unequal contraction of the muscle. I will cite a case of my own which illustrates this fact conclusively:

R——, aged sixteen, consulted me January 20, 1892. Eyelids sore at the edges as a young child. Reads a good deal. I found severe ulcerative marginal blepharitis of all four lids. I used oil of cade, yellow oxide of mercury, and silver nitrate; the eyes improved, but persistently relapsed. I suspected some refractive error and strain, but patient asserted positively that he could read any length of time without any discomfort. Moreover, on testing the acuity of vision I found it was $\frac{18}{20}$ in each eye, and he refused cylinders, which made vision worse. The Javal ophthalmometer gave, however, in the right eye 2.00 dioptries of astigmatism, and in the left 1.50 dioptry. The astigmatism must therefore have been disguised by spasm of the ciliary muscle, a fact which I proved by using atropia for two weeks, when the refraction was found to be R. with + 1.50 cyl. axis, 110°, vision = $\frac{18}{20}$ L. with + 0.25 spherical, combined with + 1.00 cyl. axis, 70°, vision = $\frac{18}{20}$. The eyes now rapidly recovered on my prescribing the above cylinders, and remained well.

Another recent case illustrates the value of the instrument in avoiding error: M. B——, aged twelve, saw me November 14, 1891. Her mother stated that at school the girl could not see the black-board, and complained that the eyes became very tired when she read.

By the shadow test (retinoscopy), I found in the right eye: myopia — 3.50 D, and astigmatism against the rule (highest horizontal); and in the left, myopia — 4.00 D. Testing with test-type I found myopia and great spasm of accommodation. The ophthalmometer gave R. lowest meridian at 10°, highest at 100°, and the astigmatism was 1.00 D. In the L. lowest, 180°; highest 90°; amount 0.75 D. Owing to the spasm of accommodation, I used atropia for three days, when the refraction was found to be approximately R. with — 3.00s. spherical glass, V. = $\frac{18}{20}$ L. with — 3.00 spherical V. = $\frac{18}{20}$. R. would take no cylinder unless the axis was held vertically. After several weeks of rest without atropia, V. R. with — 3.50s. ⌒ — 0.50 cylinder axis, 100, V. = $\frac{18}{20}$. After testing this eye with test-type and lenses a while, spasm appeared, and there was no astigmatism to be found by the fan of lines, all the lines looking alike. The astigmatism was, in other words, corrected by uneven contraction of the ciliary muscle. The eyes were rested strictly for two days, when retinoscopy gave R. astigmatism of 0.50 D., the highest meridian being vertical, thus corroborating the result found with the ophthalmometer. As long as the spasm lasted the right eye took the concave cylinder with its axis vertical, but when the ciliary muscle ceased to over-correct the astigmatism, owing to the paralyzing effect of the atropia, the cylinder cleared up the sight only when held with its axis at 10°, that is, nearly horizontal, and precisely in the meridian indicated first by the ophthalmometer. Thus it would have been safe to have given at once the lens which was indicated by the ophthalmometer.

I prescribed for reading R. — 0.50 cylinder axis, 10°;

[1] Abstract of a paper read before the Oregon State Medical Society, June, 1892.

[2] Refraction and Accommodation of the Eye, p. 320.

L. — 0.25 cylinder axis, 180°. These have proven satisfactory after six months' use. In this case, I do not believe that as long as there was spasm of the accommodation, the most expert oculist could have correctly diagnosed the 0.50 of astigmatism with the ophthalmoscope alone. I now only use atropia when there is pronounced spasm of accommodation which persists in spite of ordinary rest, and rely mainly on retinoscopy (shadow-test) to get the refraction of the meridian of lowest refraction. When there *is* pronounced spasm, all fan-tests, the ophthalmoscope, and retinoscopy will mislead.

Hysteria and malingering may also be detected by the ophthalmometer. Of the latter I lately had an amusing example. A gentleman brought me his daughter, about twelve years of age, who complained of pain, and that she could not see the blackboard at school. Her vision without glasses was $\frac{1}{10}$ only in each eye. By shadow-test and ophthalmometer no astigmatism or error of refraction could be detected. She stated positively that concave lenses improved her vision, and read the small type with them. I suspected malingering, and asking her to read with the right eye (the left being covered) the smallest type she could with the naked eye, she protested that she could only see the LXX of Snellen's chart. I then placed the *empty* frame of a trial-lens in front of the eye, when she glibly read off the XX line! Convicted of deceit, she admitted that she wanted glasses because a fellow school girl wore them!

When no astigmatism is found by the ophthalmometer, I have always found astigmatism against the rule by the ophthalmoscope, retinoscopy, and other tests. Thus: C——, aged nineteen, consulted me, stating that for six months his eyes pained when reading and writing. Vision R. and L. = $\frac{1}{20}$. Javal gives R. and L. no overlapping, and hence no astigmatism. Vision: R., with + 0.75 cyl. axis, 170° = $\frac{1}{6}$; L., with + 0.50 cyl. axis, 180° = $\frac{1}{6}$. With these for reading, all asthenopic symptoms disappeared.

There is another application of this remarkable instrument not mentioned by those who have written of it. It is to indicate the cylinder which will improve vision when there is irregular astigmatism. A man whom I cured of chronic trachoma complicated with dense pannus of the right cornea six years ago, and who lost all useful sight in the left from a corneal scar, came to me a few weeks ago to see what I could do to help his right eye with a glass.

I had not seen him for six years. I found the right cornea free from infiltration or scar. Convex spherical lenses improved vision to $\frac{1}{10}$. The ophthalmometer showed a high grade of irregular astigmatism, the images crossing and overlapping in several meridians. Their bases, however, were tangent only at 60 and 150, and the lower steps touched at 60, and the overlapping was complete at 150, indicating 6 D of astigmatism. With 2.00 spherical, 4.50 cylinder; axis, 150, V. was $\frac{1}{20}$ nearly, the patient reading some of the letters of the XX line. He was much pleased to find now that with a properly ground lens he could once again read with comfort. This is a notable instance of the value of the apparatus, because, owing to the irregularity of the facetted corneal surface, the patient could not indicate to me what lines on the fan were clearest, or clear at the same time; he seeing several clearly at the same time which were not at right angles to each other, and had I depended only on the usual chart-test we would have spent weary hours of testing with lenses.

It is an error to suppose that, while the instrument is not difficult to use as far as finding the principal meridians is concerned, it is not necessary to acquire skill in its use, or to make correct inferences from its results; but it is rank error to assume that because mistakes are made at first by those who employ it, or rarely, that it is too complicated or difficult of manipulation for the office.

Great credit is due to Drs. S. W. Burnett and H. D. Noyes, who were the first in America to write emphatically in its favor and give their results; still greater credit is due to the two distinguished men who have given us a practical instrument for the consultation room. But after all is stated, we unite to honor von Helmholtz, for every result is due to his genius and labor.

A NEW VAGINAL IRRIGATOR.

By CHARLES GETZ, M.D.,

BALTIMORE, MD.

In treating those disorders of females where thorough flushing of the vaginal passage is of prime importance, I have often been forcibly reminded of the incompleteness of the act due to mechanical inefficiency of the instruments employed. All the well-known hand and fountain syringes are open to two serious objections: 1. They do not distend the vaginal passage enough to allow the water to come in contact with the numerous folds, or rugæ of the mucous membrane. 2. They deliver so small a stream of water that it amounts to very little as a cleansing douch.

Acting upon these all-essential requirements, I have devised the vaginal irrigating tube figured in the accompanying cut. This instrument works perfectly and in all conditions; when thorough flushing of the vagina is required it will supply a long felt want. The irrigator is especially intended for married women, and those who from the necessity of gynecological examinations are minus the hymen. The irrigator is made of metal, nickle-plated, is very strong and can be kept perfectly aseptic.

As a matter of economy to some, the instrument will also be made of glass.

The vaginal part of the irrigator is one inch in diameter and four and a quarter inches long. It is slightly curved antero-posterior by thus accommodating the natural curve in the vagina better than the straight tubes of the syringes now in use. The anterior surface is beveled off as the apex is approached, thus allowing the irrigator to be inserted well up in the posterior cul-de-sac.

The terminal portion is perforated by twenty-four apertures which equal in their delivery the amount of water supplied by a half-inch pipe.

The handle of the irrigator is three inches long and half-inch internal calibre. It is supplied with a hook on the back for hanging the instrument on the rim of the reservoir when not in use.

The irrigator is connected with a tin reservoir of two gallon capacity by a flexible rubber tube also of half-inch internal calibre.

Thus it will be seen that the irrigator receives a column of water half an inch in diameter, and distributes the same through its twenty-four apertures against the cervix and upper vaginal region, gently or forcibly in accordance with the height of the reservoir above the hips of the patient.

The vaginal passage being moderately distended by the irrigator, its mucous folds receive a most thorough cleansing by the large volume of water as it passes outward. I have found that an elevation of one foot is enough to secure a good flow from the reservoir, while three feet never need be exceeded.

The tube is fitted with a spring valve by which the patient can turn the water on or off at pleasure. For the neat workmanship shown in the construction of the irrigator I am greatly indebted to Mr. Frank Arnold, of the firm of F. Arnold & Sons, Baltimore, Md.

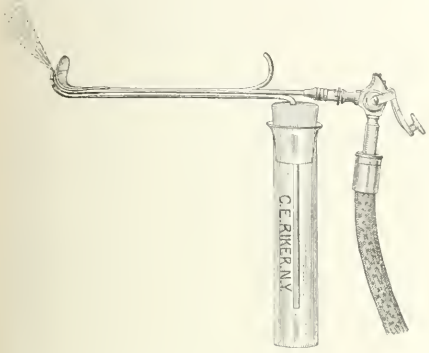
312 North Carey Street.

A COMBINED POST NASAL SPRAY AND PALATE RETRACTOR.

By WILLIAM P. BRANDEGEE, M.D.,

CLINICAL ASSISTANT POST GRADUATE HOSPITAL AND MEDICAL SCHOOL, THROAT AND NOSE DEPARTMENT; CLINICAL ASSISTANT MANHATTAN EYE AND EAR HOSPITAL, THROAT AND NOSE DEPARTMENT.

THE difficulties and annoyances met with, incident to spraying out the post nasal space, are very familiar to those who are interested in the treatment of disease in the throat and nose.



The above cut illustrates an instrument, a combined post nasal spray and palate retractor, which was devised to overcome some of these difficulties in cleansing or medicating the vault or the posterior wall of the pharynx.

The operator utilizes his left hand to hold down the patient's tongue with a tongue depressor, while his right hand is employed to introduce the retractor behind the velum, to drag it forward, thus forming the space for the up spray, and to manipulate the cut-off.

The advantages offered in the use of the instrument are manifest in that 1, the operator does not have to depend upon the patient to hold down the tongue; 2, the velum is drawn forward and cannot contract upon the posterior pharyngeal wall; 3, the spray is turned on at the time the velum is drawn forward, and so has a free opening to reach the vault of the pharynx; 4, the discomfort to the patient is reduced to a minimum. The finger-piece gives a resistance point to expend the force necessary to drag the velum forward, and the retractor-blade is made of German silver, so that it may be bent to the angle desired, and is solid, so as to prevent any injury to uvula or velum palati.

The curve of the spray-tube follows closely that of the retractor-blade.

Water or oil solutions may be used in the spray, and I have found the instrument very convenient for spraying cocaine when it was desired to produce local anæsthesia preparatory to operative procedures in the vault of the pharynx.

I am indebted to Mr. C. E. Riker, of Broadway and Thirtieth Street, for his skilful work in the embodiment of my ideas into the instrument which is presented.

36 WEST THIRTY-THIRD STREET.

Pruritus Vulvæ.—The following wash has been found useful by Dr. Bulloch, in cases of pruritus vulvæ:

℞. Aluminii nitratis..... gr. xxiv.
Aquæ..... ʒ iv.
M. Sig.: Wash the parts once or twice a day, and use also as a vaginal injection.—*N. E. Medical Monthly.*

Dislocation of the Jaw.—Monteggia reports the case of a woman who dislocated her jaw while endeavoring to remove with her fingers a small lemon-seed which had become lodged between the last two molars. She had probably weakened the jaw by over-use.

A COMBINATION TEST-CARD.

By D. W. HUNTER, M.D.,

NEW YORK.

THE facility with which many persons, particularly bright children, memorize the ordinary test-cards often makes it difficult to determine whether the patient is really reading the letters or repeating them from memory.

The combination test-card was designed to overcome this difficulty and at the same time provide a compact and convenient set of test-letters. The letters are arranged in rows, as on the ordinary test-card, but instead of using a card the letters are placed on revolving, horizontal bars set in a frame, each bar having four sides. The bars are readily turned by buttons at the side of the frame. There are nine of these bars corresponding to the nine rows of letters from CC to X, inclusive. As each of the nine bars has four rows of letters, one on each side, the arrangement provides for thirty-six rows of letters in the space of an ordinary test-card, nine rows being visible at the same time. A quarter turn of two or three of the bars completely changes the appearance of the card, and the number of possible combinations of thirty-six rows of letters, taken nine at a time, is almost endless, running into the millions.

By placing two sets of these revolving bars side by side

in a frame, provision is made for German letters, pothooks, figures, and card-spots.

The frame, which stands on the floor, makes a convenient rack on which to hang any cards one may wish to use, provision being made for the cards for testing astigmatism above, while the lower portion furnishes a convenient receptacle for extra cards. The back of the frame

could be utilized as an easel for a black-board, the whole taking up very little floor-space and capable of being easily moved about to take advantage of the varying light.

I am indebted to Messrs. GaNun & Parsons, Opticians, for their aid and hearty co-operation in the construction of the apparatus.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending November 5, 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	35	7
Scarlet fever	85	10
Cerebro-spinal meningitis	1	2
Measles	60	3
Diphtheria	108	30
Small-pox	5	0
Cholera	0	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0

Subcutaneous Injections of Thyroid Extract as a Remedy for Myxœdema.—The belief in the importance to the animal economy of the presence in the normal state of such bodies as the thyroid, supra-renal capsules, etc., is steadily gaining ground in this centre of medical activity. That organs unprovided with excretory ducts do form some product which is reabsorbed into the blood is proved by the disastrous effects following their removal. The development of myxœdema in persons whose bronchocelic thyroids have been removed is a phenomenon familiar to all practitioners of medicine. It is further proved by the experiments of Hédon, of Montpellier, already communicated by me to *The Lancet*, that the continued vitality of a grafted portion of the pancreas insures the animal against diabetes, even though the intra-abdominal portion be excised. That condition is, on the contrary, induced by the total ablation of the normal but evicted pancreas, and also by the destruction of the grafts, the intra-abdominal portion being left *in situ*. As regards myxœdema, Professor Bouchard[1] reports two cases recently treated by him at the Charité Hospital by means of injections of thyroid juice. Both patients were females, and the improvement was, in each instance, extraordinarily rapid.—*The Lancet*.

Education as a Therapeutic Measure.—A paper on "Education in the Treatment of Nervous Girls," read recently by Dr. Louise Fiske Bryson before the Social Science Association, contains the following ideas: There are three varieties of nervous girls: Those born with an originally unstable nervous system; those who have what is known as the insane temperament, yet who never become insane; and those who suffer from some definite form of nervous disease. Their education, to be practical, must be in directions of universal interest that will last a lifetime, and endure when everything else fails or is outgrown. These permanent interests are four: General literature, history, social economics, and objective science. Through good books, chiefly, is contact with superior minds made possible. History, when properly presented, breaks down prejudices, does away with intolerance, leaves the mind open to conviction, and teaches it to suspend judgment. Modern economics inevitably lessens discontent as it reveals sources of social happenings, and affirms anew the vitality of the spirit of the times. The study of science calls out and directs powers of observation and sharpens in a pleasant way the faculty of discrimination. This may be seasoned with something of art and a taste of foreign languages. But in point of health, unless ability is phenomenal, and therefore in itself an energizing power, the outlook is far from hopeful when the æsthetic side predominates.

As nothing in nature requires so much oxygen as a nerve, the necessity of outdoor sport and exercise is at once apparent. The bicycle has distinct value; also rowing, swimming, riding, tennis, old-fashion croquet, and sometimes cricket. Dancing and bowling develop strength and grace; and fencing and boxing are good for boys and girls alike. Housework constitutes an admirable series of home gymnastics. The education of the skin is a matter of great importance. Water is a means to this end, in the form of a douche, shower, or pack. The cultivation of athletics is a hopeful fashion that is rapidly becoming a custom. If girls were examined, their deficiencies explained, and rational gymnastics prescribed, purer blood, firmer muscles, sounder heads, and more satisfactory physiques would result. In childhood should begin instruction in the art of dressing well, according to the strictest conventionality. Theoretic dressing is always dangerous, especially for those who have weak nerves. Whatever makes them appear different from others, whether more picturesque or ideal, must be gently but firmly frowned down. Anything approaching a "costume" is to be deprecated for nervous girls, as it attracts attention and deepens self-consciousness. The best thing that can happen to a nervous girl is to be liked. To this end the guardians of any such child should instil early into its mind the spirit of self-denial that has for its outcome graces of speech and movement, silence and self-command, pure tones and distinct utterances, together with tact and good spirits. The effort necessary to be cheerful and sympathetic, in spite of physical weakness, lessens introspection and mental indolence, and rouses activities that might otherwise remain dormant.

Shorter school-hours, more time in the open air, more housework and accomplishments requiring bodily activity, good manners and conventionality in dress, the study of objects close at hand, familiarity with the recorded thoughts of mankind, a knowledge of the principles that underlie the social condition, the art of government, and practical politics, together with strict regard to bodily health and sufficient rest, are some of the elements necessary to happiness, efficiency, and power to please in the nervously weak. Their shrunken individuality must be expanded by means at once directed toward repression of egotistic instincts, toward the enrichment and orderly arrangement of ideas, and through multiplication of acts and external relations toward the energizing of the insufficient or diseased will. To outline definitely this special education is to introduce a factor in therapeutics capable of wide-spread influence and permanent good. To enforce it in detail is to secure conditions that bring about poise and self-reliance, and are favorable to the development of quality and fibre essential to complete living.

[1] Association Française pour l'Avancement des Sciences (Congress at Pau), September 19, 1892.

BOOKS RECEIVED.

CHARACTERISTICS. By S. Weir Mitchell, M.D. 8vo, 307 pages. The Century Co., New York.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS. Seventh Session. Vol. VII. 8vo, 355 pages.

TRANSACTIONS OF THE TEXAS STATE MEDICAL ASSOCIATION. Twenty fourth Annual Session. 8vo, 310 pages.

ANNUAL MESSAGE OF BENJAMIN J. BALDWIN, M.D. President of the Medical Association of the State of Alabama. 8vo, 36 pages.

INDEX-CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, U. S. ARMY. Vol. XIII. 4to. 1005 pages.

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Original Articles.

SUGGESTIONS RELATING TO IMPROVEMENT OF QUARANTINE.[1]

By STEPHEN SMITH, M.D.,

NEW YORK.

THE continued presence of cholera in Western Europe and the recent arrival in New York Harbor of several steamships on which the disease appeared during the voyage has awakened a new interest in the quarantine defences of this country. And this interest has been greatly intensified by the occurrences on the arrival of these vessels at the port of New York. They demonstrated the total incapacity of the most important quarantine in the United States to meet the emergencies that may arise at any time when travel and commerce are unimpeded. The apprehension which now prevails that there will be a recurrence of the epidemic in the seaport towns of Europe next season, and that the quarantine at this port will prove ineffectual, both in its appointments and management, to prevent the introduction of the pestilence into this country, will doubtless lead to efforts to secure State and national legislation, designed to remedy existing defects and evils. Whatever efforts are made should be based on principles established by sanitary science and recognized by the medical profession. It seems eminently proper, therefore, that this Association, representing the profession of the State in which the chief quarantine is located, and by which it was established, is maintained, and managed, should at this time consider this great public health question, and express an opinion which will tend to guide legislative action. In this view the following paper has been prepared.

The question of improving the quarantine of New York may be considered, first, in respect to the enlargement and perfection of the present establishment; and, second, with reference to supplementing or superseding it by a national quarantine.

The propriety of endeavoring to place our present quarantine in condition to meet the demands that may be made upon it early in the next season may be seen when we consider its construction and surroundings. The establishment is located on two artificial islands in the harbor. They were constructed at great expense by the State, owing to the intense opposition of the people to the former location on Staten Island. This opposition was so violent that the former buildings were burned, and the Legislature passed an act forbidding the location of quarantine on Staten Island and on Long Island. There was, therefore, no other alternative left to the State but to construct these islands. Like all work of this kind the construction proceeded slowly, and the expense was very great. When finally completed, the quarantine consisted of two islands of limited capacity, one for the care and observation of well persons removed from infected ships and the other for the care and treatment of the sick. Provision was made for but a single contagious disease. The capacity of these islands was for the proper care of a single infected steamship, with not to exceed one thousand passengers—of whom two hundred and fifty might be "suspects," and seven hundred and fifty well, but who had been residents of this so-called infected ship. The arrival of two or more such ships in quick succession would, as was proved in September last, create such a congestion as would render it impossible to remove the well from the ships. The travelling public must not only be subjected to great hardships under such circumstances, but they would be exposed to the danger of contracting the disease prevailing on shipboard while at quarantine.

The only method of rendering our quarantine adequate to meet the demands of the increasing travel and commerce at this port is to enlarge its area. There should be ample surface area to extend its accommodations to a limit equal to the largest demand that can be made upon the establishment. But how is this enlargement to be effected? It is impossible to occupy any part of the shores of the bay belonging to the State, or any part of Long Island, for the purposes of a quarantine. Not only does the law forbid such occupation, but public opinion is so firmly fixed and determined that it will be impossible to secure necessary legislation to that end. The only method of enlargement is, therefore, by increasing the capacity of the present islands, or by the creation of new islands. It is only necessary to state these facts to prove that there is no possibility of relief from the present situation by attempting to improve adequately the present quarantine. The State will never be induced to incur the expense necessary to such an undertaking. Nor, indeed, should it be required to create and maintain a quarantine of the dimensions and cost which will meet the present and future wants of the country. This is an obligation which now devolves upon the national Government, and it should be required to assume that obligation at once.

Fortunately, all of the conditions are favorable for the immediate organization and equipment of a national quarantine at this port. Sandy Hook, which belongs to the general Government, is, according to recent advices and events, immediately available for such purposes.

There are ample unoccupied lands which afford the necessary area for such an establishment, whether to meet present or any future requirements. The location can be thoroughly adapted to the wants of commerce, the anchorage is good, and the surface area and soil are all that could be desired for the arrangement and construction of the necessary buildings. Here can be created a station for infected ships which will admit of the immediate removal of the sick and well from on shipboard, whatever their numbers may be. The sick can be taken to hospitals adapted for a variety of contagious diseases, and the well or "suspects" can be separated into any required number of isolated groups in pavilions where they may have every convenience necessary to their comfort and health. Here also can be warehouses for the reception, cleansing, disinfection, and ventilation of every form of baggage and every variety of cargo. And, finally, here can be maintained, in a state of constant efficiency, every agency essential to the rapid cleansing of an infected ship. With such a station in this harbor there would be no need of any proclamation of a twenty days quarantine for the purpose of restricting immigration. Nor would there be prolonged detention of passengers for observation, nor the withdrawal of ships from commerce for long periods for proper disinfection.

Two questions will naturally arise in the minds of those who may not be familiar with recent national legislation in relation to the quarantine system of the United

[1] Read at the meeting of the New York State Medical Association, November 17, 1892.

States: 1, Is it practicable to secure the location of a national quarantine in this harbor? and, 2, if such a quarantine is established, will it not conflict with the State establishment?

The first question seems to be already answered in the affirmative. The Government has taken the initiative, and laid the foundations of a station that can rapidly be enlarged and adapted to supply every want and condition of the most perfect modern quarantine establishment, and in time to meet any emergency during the next season.

It may be objected that the camp created on Sandy Hook by the Government is a temporary expedient to meet an emergency, and that a permanent quarantine cannot be secured without legislation by Congress that would involve contention and delay. Happily, this is not true; but, on the contrary, the creation of a quarantine in New York Harbor and its complete equipment by the general Government would be simply an extension of the policy which it has pursued for the last decade. A brief review of the course which the Government has followed during that period in regard to the protection of the United States against the introduction of contagious and infectious diseases will show not only that the establishment of a national quarantine at New York would be in accordance with its present policy, but will prove that the Government is under obligation to create such a station for the benefit of the commerce of the North Atlantic coast.

In 1880 the National Board of Health, after the suppression of the great epidemic of yellow fever of 1878–79, in the Mississippi Valley, began to inaugurate methods of preventing in the future the introduction of contagious and infectious diseases into this country. A careful inspection was first made of the quarantines of the United States which, at that time, were all State and municipal organizations. It appeared from this inspection that our seaboard and Gulf quarantines were, with one or two exceptions, utterly worthless. As a rule they were maintained as a part of the local or State political machinery, with no pretence even of performing any useful public service. The best establishments were deficient in area, in buildings, and in appliances for the proper treatment of infected ships.

The plan adopted by the National Board to meet the exigencies found existing was to supplement these local quarantines by a series of national quarantines, called Refuge Stations. These stations were to be, and have been, located at such points along the coast as would be most convenient for infected vessels bound to ports in the vicinity. In pursuance of this policy stations have been created for the Gulf ports, one at Chandeleur Islands, and another at Key West; for the South Atlantic ports one is located at Blackbeard Island, Sapolo Sound, off Savannah; for the Middle Atlantic ports, one is at Cape Charles and another at the Delaware Breakwater. In the same manner for the Pacific ports there is one at San Diego, another at San Francisco, and a third at Port Townsend, Puget Sound. The only part of our seaboard that has not been supplied with these stations is the North Atlantic.

These Refuge Stations form a series of exterior quarantines, which are at all times to be maintained in a state of the greatest efficiency. They occupy isolated positions, generally insular, and have ample areas admitting of any necessary isolation of passengers and their segregation into groups. They are to be fully equipped with every appliance required for the quick restoration of an infected ship to its service.

In practice, any infected or suspected vessel bound for a port in the district in which a national quarantine is located would first proceed to this station and perform quarantine before it attempts to enter the port of destination. No local quarantine officer should allow such a vessel to enter the port which does not bring a certificate of having performed quarantine and been satisfactorily cleansed and disinfected at the national station.

This quarantine system finds its best illustration in England. The coast of that country is divided into quarantine districts, and for each district there is a single well-equipped government quarantine. To this station every infected vessel must proceed and perform quarantine before it attempts to enter any port of the district. The great value of this system is seen in the thorough protection which it affords a country against the introduction of a foreign pestilence. It creates two lines of defences, an exterior, where the infected vessel and passengers receive prompt and efficient care and treatment, and an interior, at which every vessel, whether infected or suspected, is intercepted and turned back to the Government quarantine.

Again, it insures at proper places along the entire coast thoroughly efficient quarantines, always ready for and capable of meeting any emergency. The importance of this fact will be recognized when we examine local quarantines in the absence of any alarm in regard to an epidemic. With rare exceptions they are allowed to go to decay, owing to the great cost of maintaining them in a state of efficiency. Perhaps the quarantine at this port has been more liberally sustained by the State than any similar establishment in the United States, and yet when a cholera-infected ship suddenly entered the harbor in 1887 it was wholly unprepared for the occasion. Though the next legislature granted a large appropriation, and very extensive additions and improvements were made, yet on the arrival of the recent cholera ships much of its equipment was found too defective to be of any service.

In regard to the relation of the local to the national quarantines it is apparent that they should act in harmony. There should be no friction. The local quarantines should continue to immediately guard their respective ports against the introduction of any infectious or contagious disease, and two or three might perhaps be relied upon to quarantine vessels having the milder forms of these affections on board, but they should depend upon the national establishment to care for vessels bringing cholera or yellow fever, or to meet any emergency.

If any legislation by Congress were necessary to place the national quarantine stations in their proper positions, it would only be necessary to pass a law dividing the seaports into quarantine districts, and require every infected or suspected vessel, bound to any port, to perform quarantine at the national station for the district in which the destined port is located. The same purpose would be accomplished if Congress would pass the following section of a bill reported by the Committee of Commerce and Manufactures to the House of Representatives, as early as May 7, 1796:

"Be it enacted, etc. The President of the United States be, and is hereby authorized to direct at what place or station in the vicinity of the respective ports of entry within the United States, and for what duration and particular periods of time, vessels arriving from foreign ports and places, may be directed to perform quarantine."[1]

[1] One of the most vigorous supporters of this bill was Mr. Smith, of South Carolina. He said: "If this question be a mere question of acquiescence in the State laws there might be a propriety in the Federal Government overlooking those laws; but it was essentially connected with the powers of Congress on an important subject. He had been surprised to hear gentlemen assert that this subject was not of a commercial nature. The gentleman from Virginia had said diseases were not articles of importation, or, if they were, they were contraband, but gentlemen must know that importations of all kinds were under the regulation of Congress, and contrabands as much as any other. Consider how epidemics, imported, affect the United States at large. They do not merely affect the city where first imported, but they obstruct the commerce of all others; they not only embarrassed the commerce, but injured the revenues of the United States. Another point of view in which it had an effect: the laws regulating the collection of imports were counteracted and obstructed by the laws regulating quarantine, and would any gentleman say that a State legislature had the power to contravene the act of the Federal Government, to obstruct all of the laws by which it collects its revenues. It had been said that this subject could be better considered in each individual State than we could possibly settle it. Who are we? Are we a foreign government? Gentlemen had already forgotten their arguments on former occasions when speaking of the power of the

The quarantine at the port of New York, in the event of the creation of a national station at Sandy Hook (or, indeed, in any event), ought to be placed under the jurisdiction of the Health Department of the city of New York, which should be made responsible for its proper management. Its officers and employees should be appointed by that department, and the chief officer should be the Sanitary Inspector of the Port. The laws relating to the government of quarantine should be repealed, and the Health Department should be authorized to make such rules and regulations relating to the inspection of vessels, their proper care, and the details of administration of this sanitary service of the port as it may from time to time deem necessary. Such a change in our quarantine establishment would of itself be an immense improvement, for it would be brought under the immediate supervision of a department which has a vital interest in its efficient and successful management.

SUPRAPUBIC HYSTERECTOMY AS PERFORMED WITH A SET OF NEW INSTRUMENTS DEVISED FOR THE PURPOSE.

By J. S. PYLE, M.D.,

CANTON, O.

I DESIRE in this article to review the field of hysterectomy, introducing new features and a new set of instruments designed as an aid in the successful performance of the operation.

Hysterectomy as made per vaginam is unsurgical and should be discouraged. The operator cannot foresee danger likely to be encountered in this class of operations; and with the most favorable cases possible at our command the vaginal route cannot be approached in any other than a haphazard manner. An old operator once said to me, "Vaginal hysterectomy is all guess-work." Since then experience has taught me to entertain the same view. In vaginal hysterectomy only the most favorable cases should be undertaken, while in the supra pubic operation cases that would be entirely excluded can be successfully operated upon. In carcinoma of the cervix no one can, through an examination of the patient prior to the operation, form any definite conception of the extent of the carcinomatous infiltration of the broad ligaments and surrounding tissues. This can be made out with a considerable degree of satisfaction in the abdominal operation, where the structures are thoroughly exposed and an ocular demonstration made.

Old inflammatory adhesions, immobilizing the pelvic organs, place vaginal hysterectomy beyond a possible hope of success. The same can be said of advanced cases of carcinoma where the uterus has undergone enlargement. The greater the hypertrophy the more difficulty attends removal. Anatomical differences also influence the success of this method of operating. A narrow vaginal canal and resistant tissues compromise the field of operation and increase the difficulty. With all the conditions favorable, not a step of the operation can be entirely satisfactory. Strict antisepsis is out of the question. Ligation of the bleeding vessels and uterine ligaments is accomplished in a chance manner. The ureters and knuckles of intestine may be injured or included in the ligatures. The closure of the vaginal roof, when attempted, is always imperfect. On the other hand, as a plea for the suprapubic operation, I offer the following observations: The operation can be made in a surgical manner, every step intelligently prosecuted, and the greatest chances offered the patient for recovery.

I proceed, after minor preparation of the patient has been attended to, by thoroughly cleansing the vaginal canal with antiseptics, and if the operation be performed for the removal of a cancerous cervix, the cervix is scraped of all its loose particles and irrigated with a 1 to 1,000 bichloride solution. The cervical canal is then packed with minute tampons of cotton-wool saturated in a solution of bichloride. This is to prevent any escape of infectious products while the organ is being removed through the peritoneal cavity. The abdominal wall is prepared in the usual way, and the patient is anæsthetized and placed on the table. Five assistants are required; two to assist directly in the operation, and the remaining three to take charge of the anæsthetic, sponges, and instruments. Strict antiseptic precautions are observed throughout the operation. The peritoneal cavity is opened through the linea alba, just above the symphysis pubis. The length of the incision required varies, depending upon the mobility of the uterus, but as a rule it should extend from the umbilicus to the symphysis. Aside from a few minor details, up to this juncture all suprapubic operations are prosecuted alike. Surgeons differ as to the manner of releasing the organ from its attachments, the closure of the pelvic floor, and the disposition of the pedicle, when one is left.

Eighteen months ago—independent of any other operator—I conceived my ideas of the entire removal of the uterus by the abdominal route. Eastman, it appears, had entertained similar ideas, and superseded me in making them known; but while our operations are essentially the same, they differ in the technique of their performance. I aimed at rapidity, and to achieve this designed a set of hysterectomy instruments, which were submitted to Messrs. Tiemann & Co. about eighteen months ago, and in the course of a few weeks they were completed. The operations as performed by Schröder, Pean, Byford, and their disciples, consist in the amputation of the uterus through the neck, and retaining a stump as a key to the

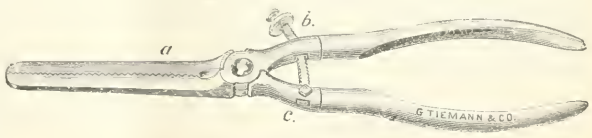

FIG. 1.

support of the pelvic contents. These methods are limited to the removal of the uterus for diseases affecting the body and fundus, and are not applicable to cases of cervical cancer.

I cannot see the importance of retaining a stump in any case. The danger arising from hemorrhage, which Byford has tried to obviate, makes it desirable to completely remove the neck. The argument that it supports the pelvic contents is untenable. I should be inclined to hold the opposite view; that its inherent weight would encourage prolapse of the posterior vesical wall; while, on the other hand, in the removal of the cervix the recto- and vesico-uterine attachments are united, and the effect is to tighten rather than to relax the pelvic floor. Furthermore, it cannot be held that the removal of a weight having a natural tendency to produce prolapse will increase that tendency. The reasoning is fallacious.

FIG. 2.

Supporters of this idea also maintain that to remove the cervix exposes the patient to increased risks of septic infection. I cannot agree with this view, inasmuch as the closure of the peritoneal cavity can be made as perfect in

House; they could then do anything and everything, and the people looked up to them alone for protection. If the subject was vested in the general Government it was their business to protect the health of their fellow-citizens as much as their property; because if the performance of quarantine was neglected such neglect naturally tended to affect the lives as well as the revenue and commerce of the citizens throughout the United States. He, therefore, thought it a subject perfectly within the Federal jurisdiction."

the absence of the stump as with it, and the healing process takes place even more rapidly, owing to the exclusion of the cervical canal as a source of infection.

In my method, after the abdomen is opened, four pair of clamps, after the style of Fig. 1, are clamped upon the broad ligaments. The jaws of the clamps are long enough to seize the ligament from the top to its lower border, the serrated edges and nicely juxtaposed surfaces securing perfect hæmastasis.

Figs. 3, 4, and 5.

At *b*, in Fig. 1, the handles are separated from the clamp; at *c*, a catchpin, provided with a thumb-nut, passes through the shoulders of the levers and is used to fix the jaws whenever the handles are compressed.

The handles shown in Fig. 2 are separated from the clamp; they are universal, and are removed as soon as the clamp is fixed upon the ligament. This reduces the length of the instrument and economizes the necessary space.

Fig. 6 shows all the clamps adjusted and the uterus elevated above the pelvic brim with vulsellum forceps, and held by an assistant. In applying the clamps two pair should be placed upon the ligaments, one on either side of the uterus, as close to the organ as possible, and the remaining two removed from these a short distance, leaving space enough between the clamps to divide the ligaments with scissors, as is shown at *a* in the illustration.

Owing to the fact that the uterus is made pendulous and less traction is necessary, the clamps should be applied and the ligaments divided before the organ is lifted from the pelvis. When this step is completed the uterus is drawn through the abdominal incision, the hypogastric arteries ligatured (using the right-angled needle shown in Fig. 4), and a separation from the vaginal roof effected by cutting laterally on either side from the front to the rear of the cervix. The uterus, being freed, is removed, accompanied by two

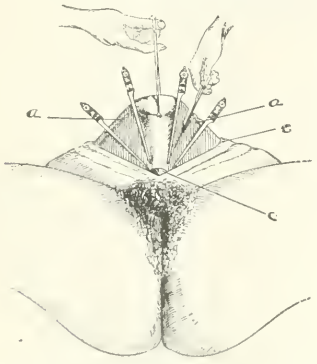

Fig. 6.—*a*, Point of division of broad ligaments; *c*, top of bladder; *c*, border of abdominal wall.

pair of clamps attached to the proximal ends of the ligaments. Fig. 7 shows the pelvic contents after the organ has been taken away.

In this illustration the incised pelvic floor is held up by two assistants with two tenacula, and the needle is Fig. 3, shown in progress of making the first suture. The manner of making the sutures is important. No. 34 silver wire is used, cut in pieces six inches long, each piece being armed at each end with a loop of No. 8 silk thread. The loop of silk is dropped into the open eye of the needle shown in Fig. 3, which is thrust through the pelvic floor into the vagina about a quarter of an inch from the border of the incision. The loop is then removed from the eye and the needle withdrawn, and the opposite end of the suture treated in like manner. When both ends of the wire have been secured in the vagina, the ends should be given a few twists to prevent slipping. All sutures are adjusted in like manner from before backward, separated from one another about a third of an inch. The broad ligaments should then be ligated in three parts

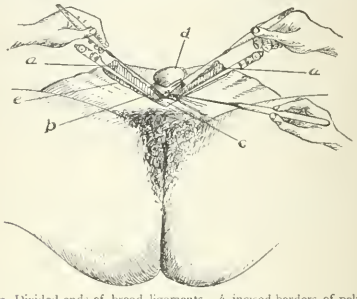

Fig. 7.—*a*, Divided ends of broad ligaments; *b*, incised borders of pelvic floor; *c*, top of bladder; *d*, rectum.

with No. 8 silk (using needle shown in Fig. 5), the clamps removed, and the pelvic floor closed by twisting the silver-wire sutures through the vaginal canal. An ordinary bivalve speculum is used to open the vagina.

Fig. 8 shows the pelvic contents at the close of the operation, before the abdomen is closed.

Lastly, the abdominal toilet should be made the same

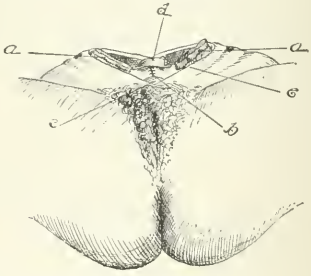

Fig. 8.—*a*, Ligated broad ligaments; *b*, coaptated pelvic floor; *c*, incised abdominal border; *d*, rectum.

as in other abdominal operations, and the vagina packed with bichloride gauze impregnated with iodoform. Extra precautions to secure rapid closure of the peritoneal cavity may be taken by uniting the incised peritoneal borders of the pelvic floor and abdominal wound with small animal sutures. This is optional, and should be left to the judgment of the operator at the conclusion of the adjustment of the silver-wire sutures directed into the vagina. Usually the coaptation is so perfect that this is unnecessary. For this method of making hysterectomy I claim rapidity, thoroughness, wider application, and an ideal surgical operation.

68 West Tuscarawas Street, August 10, 1892.

Boro-Borax is a new preparation, discovered by Jaenicke, which is formed by mixing equal parts of borax and boric acid in boiling water. When the water cools the greater part of the substance crystallizes out. Its antiseptic and therapeutic properties resemble those of boric acid, but it has a neutral reaction and is much more soluble. At ordinary temperature 16 parts of boro-borax dissolve in 100 of water; at 100° F. 30 parts dissolve in 100 of water; while boiling water dissolves seventy per cent.

DIPHTHERIA AND ITS RELATIONSHIP.

An Antithesis to the Modern Doctrine of Microbes and Bacteria, from Original Researches.

By A. LIEBIG, M.D.,

NEW YORK.

When first I began, five years ago, to take a deep interest in the etiology of diphtheria, the formation of the membrane was the first point which particularly attracted my attention. The variety of explanations of the manner of the formation of this membrane alone gives the observer sufficient matter for meditation, and he must, premising a sufficient knowledge of medicine, chemistry, and natural sciences, come to the conclusion that here is a doctrine constructed whose deeply lying contradictions and errors may be traced step by step. To give myself a clear perspective, hence, I have determined to grasp the whole human being at the given moment—that is, to take everything into the scope of my investigation that might be a carrier of the cause of disease, as, for instance, the saliva, urine, the excrements, the vomita, the blood, and the membranes, of course all taken ante mortem. I began under the mistaken idea that these researches could be concluded in four to five weeks, and that then I would be able to give myself and my interested friends a lucid explanation on their results. However, after I had once started on the inductive way and attempted to solve and answer the questions that suggested themselves, I saw before me a task which, for complication in respect to etiology, physiology, pathology, chemistry, and natural philosophy, left nothing to be desired. I stood before a seemingly endless problem. Periods of stagnation occurred, but the more difficult the problem became the more energetically did I set my will to tear away the thick veil that nature in its mystery threw over it. My motto was: "I want to find the truth for the sake of the truth, even at the cost of my life."

There passed—shall I tell—five long weary years before I saw light, truth, and terra firma united before me. But this light shows me that I have placed myself in the most direct contradiction of to-day concerning microbes and bacteria as causes of disease. This contradiction I have not labored to find, neither did I desire it. It is here; it cannot be cast out from the world. We must calculate with this new factor, not in my interest, but in that of all humanity. I do not deny the existence of microbes or bacteria, but I do deny their causa primaria in the introduction of the disease. In twenty-five cases which I have systematically investigated I found microbes, bacilli, coccí, mycelia, thallophyta, spores, trichomata, palmelaceæ in various forms, but with these a heretofore unknown plus, which must not be omitted in this calculation. This unknown plus is composed of spirals, ova, granules, episperm. These factors form a constant basis in the disease, and hence they must be the real, the fundamental cause of diphtheria, while the hitherto supposed true causes are shown to be secondary phenomena.

On the results of my investigations I have constructed twelve theses, which I am willing to defend publicly, not through vanity or rash enthusiasm, but through the desire to benefit all mankind. The greatest inducement was my own free will, hence the work is independent, unconstrained, uninfluenced by the current idea of the day. Here speaks Nature in her might, pure and unadulterated. The language of Nature is always truth, and this I wished only to interpret for my contemporaries and posterity in my work. I wished to present diphtheria, this dreadful destroyer of children, in persona ipsa, to the anxious mothers and to the profession.

The Theses.—I. Diphtheria is caused by a living organism. This may be either winged or unfledged—infectio originalis.

II. The constituents of true diphtheria consist in spirals, ova, granules, episperm.

III. The granule is an albuminoid body and a toxicon katexochen. It is a trivalent, albuminoid animal ferment.

IV. The episperm is not a bacterium. It is the intrinsic, living attribute for the to-be-fructified ova. Its destination requires an exceedingly high degree of activity.

V. The so-called membrane is positively only a local manifestation of an eliminative and exudative process, caused by the previous absorption of granules into the blood and lymphatic circulation through the intestinal glands.

VI. The so-called membranes, whether creamy, chamois-like, hyaline, or parchment-like, are chemically and physiologically identical with the factors originally deposited in the intestines and partially their products of separation.

VII. The coexistence of microbes, bacilli, spores, schyzomyceta, mycelia, thallophyta, trichomata, palmelaceæ, and also other cryptogams and microbioses is not to be denied. They increase the intensity of the disease as well as the danger to life, but they are not the cause, neither the causa physica nor the causa excitans.

VIII. On the same basis of reasoning, there is a human and an animal diphtheria.

IX. The central and peripheral phenomena are dependent on the position of the constituents, but particularly on the condition, the quantity, and the translocation of the absorbed granules.

X. Diphtheria is an embryonal, intestinal parasitism, with consecutive local manifestations in the pharynx and larynx, with a decidedly cystic course, and of sometimes apparent hibernating tendency.

XI. The infectio originalis may occur directly or indirectly.

XII. An infectio secundaria is possible by means of the granule and episperm. It has, however, a decided moderation and deviation in its course.

These theses it is my intention to defend in my work against the representatives of bacteriology. For greater lucidity, I give below a short *résumé* of my work on the nature of diphtheria. The causa physica, the punctum saliens of diphtheria is the generative propagation, or the succession of generation of a certain living organism. I am now in possession of this organism, of the spirals, ova, granules, episperm, membranes, etc. The *facit* of the entire inductive work leads to the conclusion that there are metamorphemena which select man, certain mammalia, and also birds as their host, to carry out the alimentation and transformation of their embryonal posterity in this adopted economy, although incidentally and transitorily, yet also compulsorily.

The organism reaches the human economy by means of uncooked food, perhaps also in water, in the form of a small insignificant larva, and here begins the progeneration in the production of ova. But the necessity which compels the host to support and to nourish the ova lies in the linking of the ova to the intestinal glands by means of the spiral. The true reason for this compulsory exhaustion of a foreign economy I believe to be founded in this, that the life of the mother, after having given birth to a future generation in the form of one, two, or three thousand eggs by this intense reproductive power, is at once exhausted. Hence the mother is induced by a natural foresight to secure the ova, as she can no longer herself provide for them otherwise.

This mother, in anticipation of her imminent death, possesses prospective ingenuity for the necessities of her children, for she fastens the ova to the intestinal glands and dictates besides to the respective pension the feeding of the same *à la carte* in the form of an energetic ferment that is the trivalent albuminoid granule. It is not sufficient that the ova can be nourished in the strange economy, but the host is compelled to feed the ova in a fermented way.

Such is the language of Nature, and Nature never lies. For mother and father live in nature in fresh and fer-

menting vegetables, in decomposing flesh, in rotting cadavera, and hence the mother desires that her children already as ova shall be reared and developed to maturity in the foreign economy, but on a fermented albuminoid nutriment. This testamentary devising involves and insures a richly fermented nutrition for the ova, but this decree in the form of the albuminoid granule is the germ of death for the bearer of this predestined support, nutrition, and development, for the granule, being an albuminoid ferment, involves the nourishment of the ova in two forms:

1. *A Gaseous Form.*—The ova get a fermented local respiration in the intestine, introduced by the vegetable local fermentation.

2. *A Liquid Form.*—The ova get a fermented local albuminoid alimentation, introduced by the albuminoid granule in the general plasma fermentation.

The latter form of nourishment has for consequent phenomena: 1. The breaking up of the plasma. 2. The breaking up of the blood-cell and its alluviation in the pharynx. 3. The catarrhal exudation from the eye and nose. 4. The plastic exudations in membrane form in the pharynx and larynx.

That the ova, as her children, shall not remain sterile, however, the mother leaves them thousands of episperm rods for the fructification, which appear almost identical with the bacilli in form and structure. The fructification of the ova occurs by the swarming out of the intensively active episperm rods during the general fermentative periods, with the symptomatically appearing fever-paroxysms.

All other microbes and symbioses appear as secondary, concomitant, aggravating elements, for this can find a firm hold only after the introduced plasma fermentation, as a disturbed equilibrium of the plasma is the absolute necessary basis for the multiplication of the microbes.

First a split up plasma by means of the granule, and then door and gate are ajar for the multiplication of microbe and bacteria. The character of the disease, namely, whether there develops in a given case, diphtheria, scarlatinal diphtheria, or croup, is dependent on the disposition of the constituent elements, which form the natural modus propagandi. If, then, we wish to accurately specify the cause of diphtheria as such, we must say:

1. The propagation of the metamorphemena is the causa physica. 2. The mother, as the state of life, is the causa propria. 3. The spiral, as the chain between the intestine and the ova, is the causa mathematica. 4. The ova, deriving fermented nourishment, the causa postulans. 5. The granule, as the general ferment, the causa excitans. 6. The episperm rods, as the fructifying element of the ova, the causa alterans. 7. The fruits of the creeper plants, as bearers of the germ, the causa medicatrix. 8. The sojourn of the being in the free nature, the causa remota.

The causa physica is chronologically in diphtheria as follows: 1. The albuminoid ferment, in breaking up the plasma, is the causa primaria. 2. The microbis, capable of multiplication only in an altered economy, is the causa secondaria. 3. All the microbioses, as bacilli, cocci, spores, mycelia, undoubtedly only the causa concomitans.

My work explains satisfactorily: 1. Where and why the membrane formation occurs in the pharynx and larynx. 2. How the membrane formation occurs, and of what it forms. 3. Why complications of bronchitis and pneumonitis appear. 4. When and under what conditions metamorphoses occur. 5. The metamorphoses may be: Diphtheritis pallida, diphtheritis scarlatinosa, laryngitis membranosa, laryngitis membranosa crouposa, laryngo tracheitis membranosa.

That the metamorphemena follow this modus propagandi cannot be exclusively shown by medical investigation, for it lies in the province of the entomologists, whose competent decision of my correct or incorrect observation we must first obtain.

On the discovery of this problem I will be able to place in the hands of medicine the proper and fitting key to a large group of internal diseases, as soon as the opportunity is given me for further researches.

111 East Twelfth Street.

EXCISION OF THE INNER TWO-THIRDS OF THE RIGHT CLAVICLE FOR SARCOMA.

By ARNOLD CADDY, F.R.C.S. Eng.,

CALCUTTA, INDIA.

MEMBER OF THE CLINICAL SOCIETY OF LONDON; MEMBER OF THE BRITISH MEDICAL ASSOCIATION; MEMBER OF THE CALCUTTA MEDICAL SOCIETY; LATE SURGEON TO THE CANCER HOSPITAL, LONDON, AND CLINICAL ASSISTANT TO THE ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.

Nathaniel N— —, aged twenty-six, a gas stoker by trade, living in Battersea, London, was admitted into the Cancer Hospital, London, January 6, 1892, complaining of a large swelling on the inner extremity of the right collar bone.

He had no family history of malignant disease, and his personal history was that about two years ago he fell from a height and alighted on his shoulder. He sustained no fracture, and he felt but little ill effect from his fall. Twelve months ago he felt that his right shoulder was rather stiff, and then he noticed a small lump growing at the inner end of the collar bone, about the size of a walnut; it gave him very little inconvenience, and he suffered no pain from it. This lump grew slowly till a few weeks ago when it began to grow faster. Sometimes after using his arm a good deal he became more tired than he was wont to do before the swelling came. He has been able to use his arm freely and to do his work well. He at no time had noticed any swelling of the right upper extremity or of the right side of the face. He had not been getting thinner but has always been healthy and strong. He was a fine, healthy looking, muscular, well-developed young man, with very grotesque tattooing all over his body. There was a solid, rather hard, very slightly elastic swelling, situated at the inner end of the right clavicle, firmly attached to the bone and implicating the inner half of it. The external limits were well defined and circumscribed, but below the clavicle it seemed to extend downward rather indefinitely in the substance of the pectoralis major muscle. The surface was smooth, the skin moved freely over it, and the superficial veins were slightly enlarged. There was no tenderness on pressing the growth, and there were no enlarged lymphatic glands to be felt in the neighborhood. The arm could be moved quite freely by the patient. The growth moved with the clavicle, and when the shoulder was pushed forward to the fullest extent the fingers could be pushed down behind the growth. There was no œdema of the right arm, and the pulse was equal in the two radial arteries. The heart and lungs were healthy. Urine clear, acid, golden, sp. gr. 1020; no albumin and no sugar present.

After consultation with my colleague, Mr. Bowreman Jessett, when periosteal sarcoma of the clavicle was diagnosed, I decided to excise the clavicle and the tumor. Accordingly on January 7, 1892, with Dr. T. Johnston English giving ether, and assisted by the house surgeons, Mr. S. D. Willard and Mr. C. P. Le Quesne, I made an incision six inches in length along the anterior border of the right clavicle, meeting at the sternal end with another incision running vertically along the inner border of the sterno-mastoid muscle, commencing on a level with the cricoid cartilage and ending three inches below the sterno-clavicular articulation. The skin having been dissected off the tumor, the clavicular attachment of the sterno-mastoid was divided, the clavicular portion of the pectoralis major muscle was freed from the tumor in the same way. As the outer third of the clavicle was not implicated in the disease, I decided to retain it and remove only the inner two-thirds of the bone. A metal spatula was next passed behind the clavicle at the junction of the outer with the middle third of the bone, and the

bone was sawn through. The bone was then lifted up and the subclavius muscle and the rhomboid ligament were divided by careful snips with the scissors. The inner end of the bone was forcibly turned upward and inward and freed from the surrounding parts. The anterior and posterior sterno clavicular and the interclavicular ligaments were divided and the bone separated from its attachment to the sternum, the fibro-cartilage being removed with the bone. After the removal of the inner end of the bone it was found that a narrow tongue of growth extended downward behind the manubrium to which it was attached, but it did not involve the bone. This was carefully separated and great difficulty was experienced in getting it clear. In doing so the pleura and the innominate vessels were exposed to view, but happily the tumor had not formed a dense attachment to them. The phrenic nerve was not seen during the operation. There was not much hemorrhage at any time, every wounded vessel being at once controlled with forcipressure forceps. The parts around were carefully examined for more signs of the disease, and it was found to have been freely removed. All bleeding having been stopped, and the wound cavity thoroughly dried, the edges of the incisions were sutured with silkworm gut, and a drainage-tube was inserted at the sternal end of the wound. The wound was dressed with cyanide gauze and salicylic absorbent wool. The patient bore the operation, which lasted one hour and forty minutes, remarkably well.

On January 28th the wound was quite healed, and by February 2d the patient was quite well and anxious to begin work. He had no difficulty in moving his arm in any direction, and there was no sign of any return of the growth, either in the wound or in the neighboring structures.

The growth when cut across was seen to be distinctly growing beneath the periosteum. It was somewhat dense in structure and yellowish white in color.

The specimen was kindly examined microscopically by Dr. H. D. Rolleston, pathologist to the museum at St. George's Hospital, London, and pronounced by him to be a small spindle-celled sarcoma; it was not very vascular, but there was some extravasation of blood into its substance. The specimen is now in the museum of St. George's Hospital, London.

I have thought this case worthy of record, as it is one of the rarest operations in surgery, and one beset with difficulties, causing grave anxiety to the surgeon owing to the close proximity of many vital structures, and it is fraught with peril to the patient. I was led to advise the performance of such an extreme measure for the following reasons, which I laid clearly before the patient, before operating: He was a young man and otherwise healthy and well able to bear the necessary shock of the operation; the growth would inevitably spread and terminate his existence before long; the skin was not implicated in the growth nor were the big veins at the root of the neck pressed upon. That the movements of the upper extremity were perfectly free, and this fact would help me somewhat during the steps of the operation.

I have been at great pains to look up the literature of the subject, and I find that so far only twenty-eight cases have been recorded in which this operation has been done. I have found several where the clavicle has been removed for necrosis, and where the bone was regenerated from the periosteum left behind.

There are also eight instances recorded by Jaeffreson, of Newcastle-on-Tyne, where the clavicle has been removed with the arm and scapula for malignant disease of the shoulder (vide *The Lancet*, vol. i., 1874, p. 759). I must also mention the case recorded by Schneider in the *Archiv. für Klinische Chirurgie*, vol. xxiii., 1887, of penetrating gun-shot wound of the chest, gangrene of a greater part of the left lung supervening, resection of several ribs and left clavicle, and the patient recovered. But the appended list contains only cases where ablation of the clavicle has been performed for malignant disease.

One is struck, on examining the cases that recovered the immediate effects of the operation, how little impairment there is in the movements of the arm. In my own case the movements were perfect, and being a well-drilled man, he took care that his right shoulder should never droop, so that when clothed no one could notice any difference in the two shoulders. This was probably due to the fact that, the outer third of the clavicle being left behind, the clavicular attachments of the trapezius and deltoid muscles were not interfered with. In Mr. Travers's case the patient was able to row on the Thames a few months after the operation. Dr. Britton's patient was able to work as well as ever after the operation. In M. Polaillon's case, where the outer three fourths of the bone were removed, all the movements of the arm were preserved. In Mr. Bowreman Jessett's case, that of a young lady, she was able to do her hair in a very short time after the operation, and in this case the whole clavicle was removed.

TABLE OF CASES OF EXCISION OF THE CLAVICLE FOR SARCOMA

Case.	Surgeon.	Year.	References.
1	Dr. Mott	1828	London Medical Gazette, vol. iii., p. 405.
2	Dr. Warren	1832	Surgical Observations on Tumors, Warren, 1837, p. 405.
3	Mr. Travers	1837	Med. and Chirurgical Trans., vol. xxii., p. 135.
4	Dr. Owens	1854	New York Med. and Surg. Journ., vol. xi., p. 164.
5	Mr. Curtis	1856	Amer. Journ. of Med. Sciences, vol. xxxiv., p. 35.
6	Prof. Esmarch	1859	Dissert. de Ressect. Kelice, 1859.
7	M. Péan	1861	Gazette des Hôpitaux, 1861, p. 419.
8	Dr. Meyer	1868	Gazette Medicale de Lyon, No. 8, p. 93.
9	Dr. Cooley	1869	Richmond and Louisville Med. Journ., vol. viii., p. 620.
10	Dr. Britton	1869	British Medical Journal, 1870, vol. i., p. 518.
11	Mr. T. Smith	1874	St. Bartholomew's Hospital Reports, 1874, p. 122.
12	H. Bœckel	1879	Gazette Med. de Strasbourg, 1879, viii., 77.
13	M. Ollier	1882	Sur. les Resections, 1892, vol. ii., p. 895.
14	Dr. DeSchweinitz	1884	Philadelphia Medical Times, 1884-5, xv., p. 366.
15	M. Polaillon	1885	Gazette Medical de Paris, 1885-87, ii., 160.
16	Dr. Wheeler	1885	Trans. Acad. of Med. of Ireland, 1885, iii., 172-176.
17	Mr. Rouse	1886	Lancet, vol. i., 1889, p. 575.
18	Mr. C. Heath	1887	Lancet, vol. i., 1888, p. 721.
19	Prof. Chiene	1887	Ref. in Lancet, vol. i., 1889, p. 1129.
20	Dr. Sloan	1887	American Journal of the Medical Sciences, 1887, N. S., xciii., p. 485.
21	M. Reverdin	1888	Rev. Med. de la Suisse Romand., 1888, viii., 689-691.
22	Dr. Wanscher	1888	Hospitals Tidende, 1889, vol. i., p. 310.
23	M. Després	1889	Bull. et Mem. de la Soc. de Chirurg. de Paris, 1889, N. S., xv., 143-146.
24	Mr. Jessett	1889	Lancet, 1889, vol. i., p. 1077.
25	Prof. Graoata	1889	Gaz. d. Osped., Milano, 1889, x., 306.
26	Mr. Sutton	1890	Medical Press and Circular, London, 1890, N. S., i., 385.
27	Mr. Barling	1890	British Medical Journal, 1890, vol. i. p. 598
28	Mr. Caddy	1892	

The first case ever operated on, that of Dr. Mott, of New York, is of great interest. The patient was nineteen years of age, and lived fifty-four years after the operation. The bone was removed in two pieces, and the tumor was the size of a man's two fists; the operation lasted four hours. The autopsy was made by Dr. F. R. Porcher, and recorded by him in the *American Journal of the Medical Sciences*, vol. lxxxv., pp. 146–148.

I was present when Mr. Rouse removed the whole of the right clavicle from a man aged twenty-nine, in St. George's Hospital, London. The operation lasted two hours, and the subclavian vein, which was lying in contact with the growth, was nicked twice, the wounds being caught up and tied with catgut. Death took place ten days later from septicæmia. In my own case I am convinced as to the value of the scissors in performing such operations, and the ease with which bleeding can be immediately controlled is of great assistance to the surgeon. When I last heard from my patient he was doing well, and as there are instances on record of complete recovery after this operation, a similar result can be hoped for in his case.

22 HARLEY STREET.

The Conclusions of the Astronomer are that the moon is an absolutely sterile planet, a fact which should secure for it a particularly happy attitude on the part of surgeons. In that not impossible future when man has mastered all the forces of nature and harnessed them to his use, we may look to have all major operations done on the moon, where asepsis is normal and absolute.

SAN ANTONIO AND SOUTHWEST TEXAS AS A WINTER RESORT.

By EUGENE M. LITTLEJOHN, M.D.,

THOMASVILLE, N. C.

In a recent issue of the MEDICAL RECORD I attempted to set forth the advantages of the Rocky Mountain region for consumptives, from my own experience as patient and physician. In this article I made only slight reference to that class of patients, who for different reasons are not likely to be benefited by high altitudes. Since this was written (nearly a year ago) I have become a member of this class myself, on account of a kidney complication which necessitated a change to a lower altitude. Besides these cases that are not suited to a high altitude at any time, there is a large number who at this season of the year prefer going to some mild climate, provided it has at the same time a dry, bracing, and tonic atmosphere. I wish now to call attention to a section of country that, in my opinion, is not only the most desirable place for this class of patients, but, as I have had opportunity to learn, is also one of the most favorable climates for lung troubles generally, especially when they are of the catarrhal variety. The section I refer to is San Antonio and Southwest Texas.

In the description of this place it will be seen that outside of its advantages as a residence for lung patients, it is really unsurpassed as a winter home for anyone who can appreciate genial sunshine and invigorating air, of such dryness and purity that it prevents the enervating effect which is produced by other warm Southern climates, where there is so much more humidity in the air. This climate is also conceded to be especially beneficial in winter to chronic catarrhal affections generally, kidney diseases, chronic rheumatism, and many nervous affections which require outdoor exercise and a mild climate in their treatment. While this section of country has come into great prominence in the last few years as a winter resort and a resort for consumptives, yet there are many who have a false idea as to some of the features of this climate. They have heard of the Texas northers, and are afraid to enter the State in winter on this account. In reality, these northers may be pretty cold when they enter the State from the north, but when they reach the neighborhood of San Antonio they are so thinned down and subdued that they cause little trouble, and the air is very dry and stimulating. Besides, they are only periodical, and at other times in winter the prevailing winds are from the southeast principally, which, of course, coming from the Gulf as they do, are mild and pure, and, at this distance inland, are practically free from moisture. These winds I consider a great blessing, as they prevent stagnation of air in the towns and take off all impurities as fast as produced, replacing this with pure, fresh air. These winds are not of great velocity and, as stated before, are not usually cold. San Antonio, which is the principal city of this district, has an altitude of about seven hundred feet, and is situated in an undulating country of varying degrees of altitude which gradually slopes to the Gulf.

There are no marshes or bayous, and the streams are swift running. The Signal Service reports show that at this point, for a series of years, the average number of days during any portion of which the thermometer goes below the freezing-point is fourteen, or about two weeks during the whole winter. Roses are in bloom until Christmas. The number of clear and fair days at San Antonio averages 287. One important advantage that this place has, as a winter resort, is its accessibility. For instance the journey from St. Louis or Memphis can be made without change of cars over the Iron Mountain route and International & Great Northern Railroad direct to San Antonio; there being no high snow-covered mountain passes to contend with, such as the invalid dreads in reaching some of the extreme Western resorts in winter. Another advantage of this place is that both the invalid and pleasure-seeker can find here an amount of diversion not to be found at other winter resorts. San Antonio, which was the old capital of Texas, is a city full of historic associations, and many of the old landmarks, such as the Alamo, are still standing to remind one of the brave deeds of Crockett, Travis, and the other Texan heroes. There is no end to the amusement and diversion to be obtained by watching the customs and gayeties of the Spanish population and half-breeds, which are seen here in perfection. But besides this native and large American population at San Antonio, the city and its excellent hotels are now crowded in winter with wealthy and cultured visitors from all parts of the country. Not only invalids but pleasure-seekers, and those that are there to escape the cold Northern winters. I have spoken here of San Antonio as the principal city of this section, but there are many smaller towns in the vicinity that will suit those who prefer village life. If a higher altitude is desired, those to the northward will be found considerably higher. Boerne, Comfort, Kerrville, Castroville, Bandera, Mason, Fredericksburg, and Llano are all good points; and again, if anyone wishes to rough it on a cattle-ranch or farm, he will find no trouble in getting located suitably near any of these points desired. I will close this with the following extract, quoted from an article read before the American Climatological Association by Dr. M. K. Taylor, Major and Surgeon U. S. Army, retired, who has had a large experience in this country.

"The opinions which have been presented are the result of a pretty large experience in the various sections of the United States. Born, raised, and educated in the North, and with professional and personal experience on the Ocean and Gulf seaboards, and some experience in climbing the Colorado mountains, I think that I speak advisedly when I say, of them all I prefer that Southwestern country where the most comfort can be had for the least trouble and expense. The social relations are excellent, business is thriving, and for those who wish to take their families with them and have their children continue to pursue their studies, the schools of San Antonio afford excellent advantages. For delicate children who require the invigorating influences of moderately cool weather and active out-door life, that climate is all one could wish during the winter season, while spring with its multitude of flowers, its fragrant breezes, its genial sunlight and its evenings, with their soft sweet repose give one a better idea of an earthly paradise than any place we have ever seen or hope to see in this broad land."

October 1, 1892.

Shortening the Round Ligaments.—Dr. Chalot, of Toulouse, employs a modification of Alexander's method of shortening the round ligaments of the uterus in cases of painful retroflexion. He opens up nearly the whole of the inguinal canal, which enables him to reach the entire thickness of the round ligament even in stout subjects; each ligament is then dissected up to the internal ring, or even into the peritoneal cavity. The replacement of the uterus is not obtained by the support of an assistant, but by direct traction on the two ligaments, each of which is then stitched to the walls of the canal along its entire length. No pessary is used after the operation. The results of this method have given Dr. Chalot great satisfaction.—*The Lancet.*

A Rather Dubious Tale.—An item is passing around among our contemporaries to the effect that an epidemic of typhoid fever having broken out in Geneva the sanitary authorities traced it to a particular milk supply, and it was found that the owner of the farm from which the milk came had sent it out in cans which had been cleansed with water from a stream in which the linen of a person suffering from typhoid fever had been washed. The story further goes that the milkman sued the dairyman for damages, and that the Court awarded him $300.

Clinical Department.

A NEUROSIS (?).

By JOHN T. GIBBONS, M.D.,
BROOKLYN, N. Y.

Perhaps the following case may be of some interest to the readers of the Medical Record. It certainly will be to anyone having had a similar one.

Male, aged three, German parentage. Family history tubercular on the maternal side; no previous illness except a diarrhœa due to indiscreet feeding, the remains of which were present at the time the mother brought the child for treatment.

Some days previous the child had fallen in such a manner as to injure the scrotum. Physical examination revealed an enlarged scrotum with an abrasion on the left side. The testicles were normal, and nothing apparent around the genitals to account for the changes that followed. There was a phimosis existing with an œdematous penis, and a hernia on the left side (inguinal) just about perceptible.

The first day, the right leg was swollen to an enormous size, from Poupart's ligament to the tarsus. Extending over the buttocks and down the inner aspects of both limbs was an extensive macular eruption, varying in size from three lines to twenty lines in diameter, and of a very irregular marginal outline. The temperature was 99.2° F.; pulse, 134. The urine contained no albumin but urates in abundance, which deposited rapidly on cooling.

The second day the left leg became swollen during the night, and likewise the right arm from the shoulder-joint to the phalanges. The eruption followed on the arm, though not so extensive, and the change in color took place more rapidly than that on the lower limbs, fading from bright red, purple, purplish yellow, yellow brown, and finally disappearing.

The third day the abdomen was markedly tympanitic, the child apathetic, and taking no notice of surroundings. Pulse, 172; temperature subnormal, 97.4° F. The treatment up to the present had been symptomatic. To stimulate the heart's action the child was placed on

℞. Pulv. moschi .... .01
Pulv. Camphoræ .... .03
Pulv. Opii .... .005
M. Ft. talis dosis No. vi., et Sig.: One powder every hour.

After the fourth powder the child rallied remarkably, the pulse was 112, temperature normal. The tympanites diminished somewhat, and general improvement was manifested.

At 9.30 P.M. I was called again, the mother stating she was afraid the child would "blow up." On arrival, the sight I beheld was remarkable. The abdomen was distended to the utmost. The bowels had not moved for eighteen hours, and the last fæces were of greenish character. He was given the following:

℞. Hydrarg. c. cretæ .... .06
Resorcini .... .04
Pil. sacch. anisi .... q. s.
M. Ft. ch. No. v.; talis dosis et Sig.: One powder every hour as directed.

The tympanites diminished considerably, but not wholly up to present date (October 6th). The pulse was 128; respirations during the last exacerbation raised for the first time to 30, and returned to 22 within a few hours. Temperature 100.2 F.

The fourth day everything was apparently favorable. Pulse, 112; no fever; child takes nourishment of liquid peptonoids and milk.

The fifth day no change from the previous one.

The sixth day, during the night, the right parietal area swelled up, and with it the left eye, the lid of which looked as if it was one enormous bleb. The anæmia was now great, and eyes presented a sunken appearance. He was placed on small doses of arsenic, citrate of iron, and quinine.

The seventh day there was improvement in every direction, swelling disappeared over the boss, and considerably over the eye. The œdema at no time pitted on pressure. After a few hours' play in the morning, the child rested for the day.

The eighth day the child was apparently well out of danger. He continued to improve daily. There was a second eruption similar to the first, but not so extensive in area or character. This disappeared as the first. There were no further points of interest in the case, which is still under observation. With the valuable suggestions of my colleague, Dr. F. Weisbrod, symptomatic treatment, and the kindness of nature, the child is alive to-day. This is the nineteenth day.

Was it a case of Starr's neurosis?

349 Evergreen Avenue.

AN INFANT BORN WITH TEETH.

By J. KAUFMAN, M.D.,
BROOKLYN, N. Y.

The following curious case of an infant born at the seventh month of pregnancy with a full set of teeth I think worthy to be recorded:

On the 27th of this month I delivered Mrs. M. B—— (a primipara, aged seventeen, strong and robust) in her seventh month of pregnancy, of a male child. The labor was rather tedious, and the child was born asphyxiated. On introducing my finger into the child's mouth a sensation of teeth was imparted to it from the upper and lower jaw. I did not pay much attention to this at the time, being occupied with the resuscitation of the child, in which I succeeded. The next day, finding that the child refused to take the breast, I examined its mouth and to my utter astonishment found a full set of teeth in the upper and lower maxillæ. The mother, on being told of this, remarked that she had dreamed it the night before.

HORSE-SHOE KIDNEY.

Dr. George A. Cook, of Miller's Falls, Mass., writes: "In the Medical Record for this week it is reported that Dr. J. S. Thacher exhibited before the New York Pathological Society a horse-shoe kidney. While dissecting at the Long Island College Hospital, Brooklyn, in the winter of 1888 I found in my last 'part' a perfect horse-shoe kidney, the upper portion of the kidneys being united. Each organ had its ureter, artery, and veins. The specimen is in the Hoagland Laboratory, Brooklyn. The subject was a male, thirty-five years of age, who had died of tuberculosis. Most of the arteries within the thorax and abdomen were atheromatous. I send this imperfect description of the specimen on account of the rarity of the condition."

DUDLEY'S OPERATION ON THE CERVIX, WITH A REPORT OF FIVE CASES.

By T. D. MARION, M.D.,
CHESTER, S.C.

In the *American Journal of Obstetrics* for February, 1891, Dr. E. C. Dudley, of Chicago, recommends "A Plastic Operation Designed to Straighten the Antiflexed Uterus," modestly suggesting its adoption "when the indication to be fulfilled is wholly or in part mechanical." Soon after reading this article I determined to perform the operation on two cases that had given me no little trouble. Dilatation with steel instruments and the introduction of drainage-plugs would give relief to the dysmenorrhœa, and symptoms incident thereto for two or three months; but, as on many previous occasions, the old symptoms would return, which were alike annoying to myself and patients.

In this connection I will be pardoned, I trust, for re-

calling the experience of a very prominent gynecologist of New York City, as expressed by him a few years ago, to which he obtained much better results in the treatment of anteflexion than in retro-displacements, claiming that free dilatations, judiciously executed, would accomplish alleviation of the patient's subjective symptoms. The idea seemed quite plausible, and coming from one of the masters I was eager to put the views of this specialist in practice. But the necessity for a more radical method of dealing with this trouble becomes more apparent and convincing the more so-called free dilatations are practiced. At best, in the vast majority of cases, the procedure is but temporary in its effects, and he who pins his faith to it as a curative agent is doomed to disappointment. The following cases are briefly submitted in support of Dudley's operation.

Case I.—Mrs. T. A. S——, aged twenty-nine, married ten years. Menstruation was always painful, which gradually became more intense after her marriage. The week before and during the flow, complained of severe cramping in stomach as well as in the bowels, headache, backache, palpitation, loss of appetite, etc. At first anodynes and tonics, in short, the batteries of the materia medica were discharged on her, but, it is needless to say, with negative results. A few years later a doctor, recently in attendance at one of the Post-graduate schools, saw at once that the thing to do was free dilatations, all of which gave relief for a time, but both doctor and patient became tired and discouraged over repeated failures to obtain permanent benefit, and in consequence the patient drifted back to the old habit of taking anodynes. That she escaped septic infection, with the tubes and ovaries undisturbed, must be a great comfort to all the parties concerned. Free mobility of the uterus excluded the possibility of tubal complications, and made the way clear to proceed with the operation of dividing the cervix well back to, but not beyond, the vaginal junction, as Dr. Dudley is wont to do. "The sutures are not introduced in such a manner as to stitch the intracervical to the vaginal margin of the cut surface, but the cut surface is folded upon itself in a direction at right angles to this, *i.e.*, on either side of that point at the margin of the os externum where the backward incision commenced, and is stitched to the very angle of the incision, so that the cut surface is folded upon itself, not from within outward, but from before backward." This done the cervix no longer lies parallel with the fundus, but projects back toward the concavity of the sacrum—as was demonstrated in the case before me. The operation relieved the patient of all the old torture she endured periodically for years. Six months after the operation pregnancy followed, over the occurrence of which she was highly satisfied.

Case II.—Mrs. S. P——, aged twenty-eight, married seven years. Sterile; marked anteflexion; menstruation exceedingly painful for several years, for which she had been dilated with steel instruments time and again, while under the influence of chloroform, but the good results obtained would always prove temporary.

For two years previous to consulting me she had been having convulsions, commencing the day before, and recurring at intervals of two or three hours until the flow was established. The cervix was elongated and almost of cartilaginous hardness. After a preparatory course of hot-water injections and medicated tampons (glycerine and baro-glyceride), the cervix was divided and treated as before. It is now twelve months since the operation, and during this time she has been free from pain and convulsions. She has also gained thirty-eight pounds in weight.

Case III.—Mrs. J. B——, aged thirty-two. Dysmenorrhœa from girlhood. Sterile. The mechanical indications were much the same as in the two preceding cases. Frequent and painful urination prevented sleep, which added greatly to her general discomfort. The appetite was gone, and nausea almost constant. Bowels costive for two or three days, when a "milky" diarrhœa would set in and last three or four days, which no amount of medication on the part of her physician was able to overcome. She had a profuse leucorrhœa when brought to me from an adjoining county by her physician, who, be it said to his credit, was not a gynecologist. The cervix was elongated and eroded, the fundus resting on the bladder, there was also some fulness on the left side of the uterus, with partial fixation, which was reckoned as the danger-signal against operation. Whether this fulness was due to enlargement of the pampiniform plexus, or to a mild salpingitis, I am unable to say. The risk of operative interference in the face of peri-uterine complications was explained to my patient, and her co-operation was readily obtained in carrying out the necessary preliminaries, which consisted in hot-water injections (medicated with boracic acid) and baro-glyceride tampons to the lateral cul-de-sac. After persevering eight weeks with this local treatment, free mobility of the uterus was obtained, when the cervix was cut back freely as before, and with three sutures in each flap the bleeding surfaces were doubled over on to themselves. It is now nine months since the operation, and she has had no return of her old symptoms, for which she is very profuse in her expressions of gratitude. Twice has she failed to menstruate, and this, coupled with other evidence, makes pregnancy almost an assured fact.

Case IV.—Miss ——, twenty-one years of age, a resident of Florida, had been on a protracted visit to a famous health resort in North Carolina, and on her return home stopped with a friend in an adjoining county, who happened to be a former patient of mine, to whom she related her sufferings, and also her intention of going to a hospital in Atlanta, Ga., and placing herself under the special care of a gynecologist. She had failed to obtain any benefit from her stay in the mountains, and, altogether, was a much discouraged woman—was exceedingly nervous and hysterical, at times craving to die rather than live. She warned me that if I even touched her over the bowels it would bring on a convulsion. Preferring to take her word for it, chloroform was given, and a digital examination satisfied me that Dudley's operation, properly done, would cure her. The dysmenorrhœa dated back to her first menstruation. During the eighteen months previous to operation, metrorrhagia existed as a complication. The vegetations causing it were removed by Sims's smallest curette, the cavity swabbed with a bichloride solution (1 to 1,000) and followed by packings of iodoform gauze, which Polk, of New York, has done so much to make popular in this special field. The packings were allowed to remain undisturbed for three days, when they were removed and Dudley's operation performed. This was followed by the most happy results. Nearly a year has elapsed since the operation, and during this time there has been no return of the dysmenorrhœa, headache, neurasthenia, etc. As is often the case after using the curette for fungous granulations, she failed to menstruate on two succeeding occasions.

Case V.—This case was in many respects similar to Case IV. The anteflexion probably being more acute. She has menstruated once since the operation, which was free from pain.

In conclusion I will say, that in four of the cases operated on, the anterior lip was not removed as advocated by Dudley. In not one of the cases did the ovaries and tubes react on the treatment; they had been well prepared. Perfect cleanliness and scrupulous attention to antiseptic details must be regarded as indispensable requisites to success.

A Patent Medicine of Some Utility.—A Dublin newspaper recently contained the following advertisement: "Wanted, a gentleman to undertake the sale of a patent medicine. The advertiser guarantees that it will be profitable to the undertaker." Such a guarantee for many a patent medicine would be very profitable to the public.

THROMBOSIS OF THE PULMONARY ARTERY IN THE PUERPERAL STATE.[1]

By W. W. HEWLETT, M.D.,

BABYLON, LONG ISLAND.

On June 24, 1892, I attended Mrs. H——, a strong, healthy woman, in her sixth confinement. The labor was perfectly normal. She assured me that she had never had any trouble in childbirth. Contrary to my advice she sat up on the fourth day, declaring that she had always sat up as early as that after previous labors.

The lochia was normal, the lacteal secretion abundant, and everything went on smoothly until the twelfth day, when, while in the sitting position, she was suddenly seized with the most intense dyspnœa, extreme restlessness, followed by cold extremities, cyanosis, nausea, and profound weakness.

Owing to my absence, Dr. A. B. Leggett was hastily summoned. He promptly gave her ammonia and whiskey, and applied bottles of hot water to her feet. I saw her four hours after, when her respirations were 58, pulse 130, and very feeble, temperature normal. She was calling for air, had profuse perspiration, cold extremities, nails of a livid color, and her facial expression indicated great prostration. There was no pain; intellect perfectly clear. Her only complaints were of shortness of breath and extreme cold.

My first suspicion was that hemorrhage had taken place, but a vaginal examination soon settled that theory in the negative. After two hypodermic injections of whiskey, a half hour apart, she revived a little; but every effort to raise herself or even to turn in bed was followed immediately by an exaggeration of all the symptoms.

I explained to her the importance of maintaining the most absolute rest in the recumbent position, keeping the extremities warm, free stimulation with whiskey and ammonia, the use of digitalis, and emptying the bladder as often as required.

For a week or more the patient suffered from faintness, difficulty of breathing, and cold sensations. Auscultation revealed nothing abnormal, though it was quite impossible to examine the chest posteriorly. Heart action was feeble and tumultuous. At times the respirations were as high as 80, her suffering from dyspnœa was painful to witness, and death seemed near at hand.

After the eighth day improvement began, but it was very gradual. She was not able to sit in her chair until the beginning of the third week—about five weeks from the day of confinement. After that day improvement was uninterrupted, and recovery was complete by September 1st.

Such, in brief, is the history of a disease of which we find little or no mention in the works of the older writers. A case presenting such an array of symptoms would have been called "syncope."

The importance of possessing a knowledge of this disease may be inferred from the statement by Lusk that "thrombosis of the veins furnishes the most frequent cause of sudden death in labor and during the puerperal period."

Causes.—According to Lusk and Barker it may occur spontaneously, from a condition of the blood hyperinosis. Dr. E. L. Partridge, of New York, reported a case in the MEDICAL RECORD, of February 27, 1892. In that case nothing abnormal occurred until the tenth day, when, owing to a slight odor to the lochia, a vaginal douche was given, which was immediately followed by hemorrhage and the constant and excited complaint from the patient that she was very sick. Cyanosis ensued, followed by cold extremities, rapid pulse, violent dyspnœa, and death in about three hours.

In this case there were a number of clots of a dark color discharged. In commenting upon it, the reporter says: "The mechanical disturbance of the uterus by the forcible dislodgement of such clots, which had resisted spontaneous discharge for days, could materially assist in freeing some coagulum situated in a uterine vessel and facilitate its movement through the uterine vein into the ascending vena cava."

Spiegelberg states that "the emboli, which become detached during or shortly after labor, proceed from clots formed at the site of the placenta. Usually there is at first hemorrhage from partial detachment of the placenta, then thrombus formation in the veins, the clots, in the absence of uterine retraction, extending from the open mouths of the sinuses in the direction of the heart; and, finally, under a powerful contraction . . . the clot is set adrift from its moorings, and is washed upward through the vena cava to the right side of the heart, and thence to the branches of the pulmonary artery." It is hardly within the scope of this paper to consider further the symptomatology of this affection. It is difficult to discriminate between embolism and thrombosis. In fact, from a clinical point of view, it is not essential.

In the diagnosis care should be taken not to confound it with syncope, or shock, or post-partum hemorrhage. In thrombosis and embolism there is asphyxia, clear intellect, and intense dyspnœa added to the other conditions present in syncope, viz., rapid pulse, pallor, and low temperature.

In syncope the dyspnœa is not present, and the patient loses consciousness. If the symptoms are due to hemorrhage a vaginal examination will soon determine that point.

Treatment.—We should endeavor to support the flagging heart, which will relieve the dyspnœa, have the patient keep as quiet as possible, in the most comfortable position, avoid every possible source of excitement, and sustain the powers of life by proper food, stimulants, and tonics. If the stomach is too weak to absorb, give your patient brandy and digitalis subcutaneously; apply heat to the extremities, and empty the bladder in the catheter if necessary. Digitalis and ammonia should be continued until dyspnœa and excessive heart action have entirely subsided. Quinine in tonic doses should be given, and also alcoholic stimulants, according to general indications.

Great urgency of symptoms should not lead us to despair, for the most unpromising case may end in recovery, and much can be accomplished by prompt and judicious treatment.

[1] Read before the Suffolk County Medical Society, October 27, 1892.

A CASE OF DERMATITIS EXFOLIATIVA.

By WHITMORE STEELE, M.D.,

ASSISTANT PHYSICIAN, UTICA STATE HOSPITAL,

UTICA, N. Y.

That there is a close resemblance between pityriasis rubra, psoriasis, general eczema, recurrent erythema, pemphigus foliaceus, and dermatitis exfoliativa, is remarked by all dermatologists. Indeed, some make no distinction between the chronic form of pityriasis rubra and this form of dermatitis. Fox[1] describes it as a rare form of skin disease, characterized by severity of constitutional symptoms, and giving, as a rule, a bad prognosis. Duhring[2] describes it under the general heading of pityriasis rubra, as a rare form of skin disease, and one easily confounded with other more common forms of inflammation.

Brocq, as quoted by Van Harlingen in the "Reference Handbook of the Medical Sciences," after a careful analysis of a number of cases of the above-mentioned analogous affections, considers it to be a distinct entity, and entitled to separate consideration.

The case which I have to report corresponds in all points to the symptoms noted in the descriptions of Fox, Duhring, Brocq, and Van Harlingen. Mrs. M——, a patient at the Utica State Hospital, convalescing from an attack of melancholia, came under my care three weeks ago, suffering with a dermatitis of considerable extent.

[1] Atlas of Skin Diseases. [2] Diseases of the Skin.

She gave the history of having had her first attack about ten years ago, at which time she was living the life of a farmer's wife, was considerably exposed to the inclemencies of the weather, and was not at all careful in protecting herself therefrom. She describes this, her first attack, as being characterized by a reddish eruption over the entire body, some swelling of the extremities, and an intense burning and itching, made worse by exposure or by becoming overheated. This lasted for a number of months, into the summer, when exposure to the sun's rays increased the inflammation very much. The redness and swelling lasted several weeks, whereupon a very extensive exfoliation of the epidermis took place; she also lost her finger- and toe-nails and a considerable amount of her hair at this time. She recovered from this attack, but had several recurrences, not as severe in degree, up to the time of her admission to this hospital, which was over one and a half year ago.

One month after her admission, she was taken with a very severe attack of the same trouble, this time characterized by marked swelling of the extremities and of the face, a reddish papular eruption, accompanied by marked prostration, febrile disturbance, and quite severe gastric symptoms. It was diagnosed at this time as erysipelas, and treated accordingly. At the end of two weeks the swelling and eruption diminished, and very extensive exfoliation took place; the patient also described a very offensive exudation coming from the skin. Her toe-nails and finger-nails came off, and her hair fell out to a great extent. At this time she commenced to be troubled with an ulcer in the right nostril, which has continued slowly spreading through the nasal septum, so that now there is a cavity connecting the two nostrils, from which there is a foul discharge, which is increased in quantity during the recurrence of these attacks of dermatitis. After the cessation of this severe attack, which lasted about three months, her general condition was very poor, appetite gone, very emaciated, and anæmic.

Since this time, and up to the present date, she has had three or four attacks, most of them mild and of short duration. Her present attack commenced about three weeks ago, at which time, for several days, her skin was very dry and burned considerably. This state was followed by a reddish papular eruption, and some œdema of the feet and hands. The eruption disappeared on pressure, leaving a yellowish spot marking the pressure, the redness returning slowly. The papules were from one-eighth to one-fourth of an inch in diameter, and were found more abundantly on the extensor surfaces of the arms and forearms, and over the external aspect of the thighs—also were very abundant over the back. The swelling and eruption began to diminish in about one week, and for one week past the patient has been very extensively desquamating, her hair also has fallen out to a considerable extent. At present she complains more of the itching, which is intense, and also of some stiffness at the joints. The entire body is covered with fine scales which brush off very easily, the exfoliation is more marked at the knee and elbow joints. There has been marked malaise, and at present her blood is in very poor condition, showing only fifty-five per cent. of hæmoglobin and 2,500,000 red cells. She improved considerably under alkaline washes daily, and thirty-grain doses of potassium acetate three times daily. In consideration of the previous history of this case, and the symptoms observed while under treatment in this hospital, I cannot but think the case is suitable for classification under the heading of Dermatitis Exfoliativa.

The Indian Medical Service.—There is much bitter complaint of unfair treatment of officers of the East Indian Medical Service, and an agitation has been started for the abolition of the service and the assumption of the duties of its officers by the members of the Army Medical Staff.

Progress of Medical Science.

Abdominal Pressure for Constipation.—Dr. Feilcherfeld recommends the application of steady pressure upon the walls of the abdomen in cases of obstinate constipation. He for this purpose employs cushions containing three or four pounds of shot, so applied by means of layers of lint that they exert an equable pressure all over the abdomen. Generally the application for an hour, or an hour and a half, suffices to produce a good stool. The remedy can be used at night on going to bed or in the morning before rising. This remedy Dr. Feilchenfeld has found particularly useful in cases where there were hæmorrhoids.—*Provincial Medical Journal.*

The Insanity of Egotism.—An article has appeared in the *North American Review*, entitled "A Modern Form of Insanity," by Dr. H. S. Williams, which throws some interesting light upon those indifferently understood persons "the cranks." Dr. Williams holds that the great majority of these unfortunates are diseased mentally. The disease has been termed "paranoia," and more than any other insanity is the result of an inherited mental instability. The progenitors may not have been insane, but they may have been nervously unstable from drunkenness or from some wasting disease. The offspring may be merely nervous; he may have epilepsy or chorea; he may be insane. At the best, he may usually, if properly educated, learn to understand himself and to live a sane and useful life. We have here to do, however, only with the cases in which a wrong environing influence aids in the development of a particular form of insanity. It is possible to outline pretty definitely the mental attributes. One may even point out in the child what might be termed the paranoiac temperament. Its characteristics are morbid sensitiveness and great egotism. Unfortunately, the parents of such a child usually take pride in the egotism that leads to eccentric acts, while the extreme precocity of many of these subjects causes their egotism to be fostered by ill-adjudged praise. Usually the child of paranoiac temperament is the genius of his family and the show pupil at school. Pampered and praised, even though the entire household becomes subordinated to his sovereign will, he is not satisfied, believing that he does not receive his dues. With that idea, the germs of paranoia are implanted in his mind. Whether or not these germs will develop into the pathological condition that we are discussing, will depend largely upon the influences that are brought to bear upon them during adolescence and early manhood. Perhaps the most unfavorable environment is one in which the mind is developed at the expense of the body. And of course, the brilliant child is the one whose mental training will be forced. The other children of the family may stay at home, but this one must be sent to college and fitted for one of the learned professions. Usually he seems to justify this discrimination. Often he is an "honor" man at college, and he starts out into the world with every seeming prospect of an eminently prosperous career. But all this time he has become more and more eccentric. He has associated little with his fellows. Often he has shown himself possessed of extraordinary energy and capacity for application. A peculiarity often noted is a tendency to make elaborate written records of trivial subjects. Occasionally the young person of paranoiac temperament breaks down under the unbalancing influences of overstudy while still at school. But usually the critical stress comes after he has gone out into the world. He is usually not yet insane. He may never become so. If his business or professional ventures succeed, he may become distinguished, and contact with the world may gradually correct the morbid tendencies. But if adverse circumstances arise and refuse to be put down, especially if the individual's vanity is wounded by failure to rise to the heights pictured by ambition, morbid brooding may develop out of vanity, selfishness, and suspicion, the delu-

sion of persecution. But it must not be supposed that the mature condition is merely egotism and egoism run riot. That it has come to be something more than this is proved by the appearance, sooner or later, of hallucinations of one or more of the senses. These do not necessarily coincide at first with delusions. The incipient paranoiac may hear voices about him and for a time be able to convince himself of their unreality. But, sooner or later, these sounds become so tangible that they have the full force and import of actual voices. At first he hears them only when people are actually speaking, his mind merely misinterpreting what it hears. This perversion is technically termed an illusion. But at last he hears words and sentences when no real sound comes to his ears; these are true hallucinations. Perversions of other senses usually precede or follow this one. Illusions of touch and smell are common. The former lead to a belief in invisible spirits that touch the body; and the latter convince the patient that attempts are being made to poison him with noxious gases. When to this cluster of perverted sensations hallucinations of sight are added, the galaxy is complete, and the victim moves and has his being in an ideal world peopled with odors, tastes, sounds, and sights that are shut out from the common herd. The patient lives a dual existence. For a time he is able to treat the actual world in the old familiar way—that is, sanely; meanwhile keeping the new and strange world hidden. But gradually he comes to confound the two existences. He comes to believe that hosts of people are leagued against him, and all sane interests give way to a desire to thwart those imagined foes. At this stage of his morbid career the patient becomes very dangerous, though he may still seem to be the most peaceable of men. Murders are often committed by patients in this condition. But many more intended murders that are carefully planned are never executed because of the irresolution of the would-be murderer.—*The Journal of the American Medical Association.*

Phenacetin in Vesical Irritation.—Dr. Traill Green recommends the employment of phenacetin for the relief of frequent micturition and vesical irritation in the aged.

Hereditary Ataxia.—Dr. Loogard has placed on record three cases of hereditary ataxia in children of one family, which came under his observation. The hereditary origin of the disease was unmistakable, without any cause being discoverable in either the parents or the relatives. In none of them was a deficient development to be found. The disease had appeared acutely in the eighth to the fourteenth year, and without any apparent cause. It began with a light feverish symptom and very little pain, to rapidly pass over into the progressive chronic form. Ataxia is the most prominent symptom. Two of the patients pass the day in a chair, the other crawls about still, dragging himself around like a drunken man. Besides the ordinary spinal ataxia, with impossibility of reckoning the force and measure of movement, there is also an inclination to the cerebellar form, there being an absolute loss of equilibrium in the two oldest, the youngest walking in a zigzag manner. But besides these two peculiarities of movement, and the undoubted spastic gait, in at rest the tonus of the muscles is good and even somewhat increased. This is explained by implication of the pyramidal paths. The opposite holds true of tabes dorsalis. In one of the patients, a male, there is a slight inclination to club-foot. The muscular sense, on applying the usual tests, seemed to be better than would be expected. This is especially true in the dorsal position. In the standing position the balance is lost immediately on closing the eyes. As in tabes, the tendon reflex is absent, while the cutaneous reflex is present. It may even be exaggerated. The symptoms are especially pronounced in the upper extremities. Speech is but slightly disturbed in one, and nystagmus is to be seen in none. Hence the condition in question is a slowly progressive process of upward direction. Two of the patients relations are scoliotic. In contrast to the weakness of the lower extremities the gross strength of the muscles was striking, for the resistance offered was quite considerable. Only in one was a weakness of the ilio-psoas muscle to be discovered of both sides. This was also probably true to a less extent of the pelvic muscles, especially of the glutei. All the senses of the patients were good, only one of them presenting a slight limitation of the field of vision. If to these symptoms there be added that the affection ran a painless course, without atrophy and alteration of the electric reaction of the nerves and muscles, that no trophic changes were to be discovered, that the bladder and rectum functionated regularly, then the picture of hereditary ataxia was filled in its chief points.—*Journal of Nervous and Mental Disease.*

The Surgery of the Gall-bladder.—Professor Czerny, of Heidelberg, offers the following conclusions in regard to the surgery of the gall-bladder: 1. Gall-stones require operative interference as soon as they cause frequently repeated and long continued sickness. 2. Empyema of the gall-bladder always calls for an operation; hydrops of it only when it causes trouble. 3. The typical operation for calculi in the gall-bladder consists of the incision, evacuation, and suture of the gall-bladder; with drainage of the abdominal cavity (for a short time). 4. If the ductus cysticus be not pervious and the gall-bladder itself is inflamed, and its contents considerably altered, a temporary biliary fistula should be established. 5. Extirpation of the gall-bladder is only indicated in severe inflammatory or carcinomatous degeneration. 6. In occlusion of the ductus choledochus operation is indicated as long as the strength of the patient will permit. If we do not succeed in removing the obstruction (stone or kinking), then the establishment of a fistula between gall-bladder and duodenum is to be recommended. 7. The best way to reach the gall-bladder is a hook-like incision (⌟) the vertical shank of which lies in the linea alba, and its horizontal shank runs immediately beneath the umbilicus toward the right. (Langenbuch described a ⊢ like incision; but the author thinks that by means of his incision the gall-bladder as well as the ducts can be more rationally investigated.) 8. The risk of life, will, as far as can be seen now, be less than in operations on the urinary bladder.—*The Annals of Surgery.*

Laminectomy for Pott's Paraplegia.—From a study of this subject, published in the *Annals of Surgery* for October, 1892, Dr. S Lloyd reaches the following conclusions: The operation is naturally contra-indicated, 1. In cases where there are other complicating tubercular lesions. 2. In cases where mechanical treatment has not been applied. It is indicated, 1. In cases where posterior spinal disease is made out as the cause of the paraplegia. 2. In cases where the lesion seems to indicate the failure of mechanical treatment, *i.e.*, where dislocation has occurred or where a sequestrum is causing the compression. 3. In cases where during the employment of intelligently applied apparatus the symptoms continue to increase in severity. 4. In cases where, after a certain period of careful mechanical treatment, say eighteen months, the condition has remained stationary. 5. In cases where pressure myelitis threatens the integrity of the cord.

In all cases where sinuses lead down to, or can be safely straightened so as to allow the probe to explore the abscess cavity with which they communicate, they should be enlarged so as to provide thorough drainage, and if sequestra are present they should be removed. The surgeon should incise and treat all abscesses connecting with the spine, approaching near enough to the skin to allow of their being opened without a dangerous dissection; they should be then explored, washed out, and drained. Although the statistics of the cervical cases are slightly less favorable than those of the other regions, the dangers to life even without operative inter-

ference are also greater. One of the cervical cases died from inhibition of the phrenic nerves. In this case the disease was localized at the third and fourth cervical vertebræ, and in order to determine the presence or absence of an abscess or tumor in the cord, exploratory puncture was resorted to. The result emphasizes the dangers of interference with the cord where the lesion is at the level.

Observations on the Etiology of Malaria.—Dr. Ludwig Kamen has observed the following changes in Laveran's hæmatozoan during malarial chills. In a case of the quartan type, the following observations were made upon the blood—First day: A few small endoglobular parasites having a few peripheral pigment-granules were seen in the red corpuscles. Second day: Endoglobular plasmodia occupying the major part of the corpuscles. Besides these there are cells similar to those of the first day, but more numerous. Third day: Completely developed organisms occupying the entire blood-cell except a narrow peripheral zone. The pigment granules are scattered uniformly throughout the protoplasm. During the chill: The pigment is collected centrally in a round mass, or at times in the form of a minute radial band; marked differentiation of protoplasm. In addition individuals not yet fully developed. During the fever: Division of the parent cell into daughter cells and mature daughter cells, with disintegration of the remaining portion of the older cells. During the sweat: Pigment disks, besides certain misshapen protoplasmic masses, which apparently are dead plasmodia. The new generation does not precede the fever, but the two occur simultaneously. At the end of the vegetative stage the fever appears. The time of apyrexia corresponds to the vegetative period, and that of pyrexia to the proliferation period. Every sporulation means another chill. The time intervening depends upon the time required to pass from one phase to another. In discussing the probability of different organisms giving rise to the various forms of malaria, this division is made: Hæmamamœba malariæ—quartan; hæmamamœba vivax—tertian; hæmamamœba præcox—quotidian; and the pernicious and continued fevers—hæmamamœba immaculata; colorless variety, similar to the foregoing in its pathology; and, lastly, the Laverania malariæ, as the cause of chronic malaria.—*The North American Practitioner.*

Flaming Surgical Wounds.—M. Felizet gave an interesting account of the treatment of several cases of surgical wounds by the flame of the blow-pipe. He said that in many surgical lesions, and tuberculous affections in particular, it was often difficult to draw a positive line between the healthy and the diseased tissue, consequently it is necessary to complete the operation of the knife, the chisel, or the curette by the application of certain caustic solutions, such as chloride of zinc, etc. After the most complete resection there remains always enough of tuberculous matter to infect quite a series of animals when injected. The method he has employed in a great number of cases had for aim to destroy the diseased parts and to provoke a reaction which produces a zone of protection against the invasion of infectious matter. The principle of this method consists in passing rapidly over the wound the flame of a blow-pipe of which the temperature attains 27–32° F. He obtained by this treatment thirty-eight cures with suppuration, fourteen resections of the knee, eight of the hip, five cold abscesses of the same joint, one enormous abscess of the breast, one adenitis, etc. The lips of the wound are protected by several compresses steeped in an antiseptic solution, and the flame of a blow-pipe is passed rapidly over all the raw surface. The reaction is insignificant, and the lips of the wound, which are always left untouched, are brought together over a seared and consequently dried surface. M. Nélaton said that in two cases of cancer he was able to retard a relapse by the use of the gas cautery.—*Medical Press.*

Treatment of Typhoid Fever by Thallin.—Dr. Schmid has recently treated twenty cases, with only two deaths. At the outset calomel was administered, and as soon as the diagnosis was established, sulphate of thallin, in one or two per cent. aqueous solution, was administered every hour from six in the morning until nine at night, and in the night at two or three hour intervals. The initial dose was from one and one-half to three grains. This was increased every second or fourth hour by sixths of a grain until the temperature approached the normal or a little below it. This amount of the remedy was continued for from three to five days, then gradually diminished so long as the temperature remained about the normal. When it became subnormal the drug was omitted until it began to rise. The average duration of the use of this remedy was about seventeen days. Of the two fatal cases, in one the autopsy showed a fatty heart and very large spleen; in the other, a perforation near the ileo-cæcal valve. The author believes that thallin in typhoid fever is of equal value with hydro therapeutic treatment.—*Correspondenz-blatt für Schweizer Aerzte.*

The Increasing Prevalence of Tapeworm.—French physicians have been considerably agitated over the fact that while the population of the country is rapidly decreasing, in consequence of an increased death-rate acting in conjunction with a decrease in the birth-rate, tape-worms are rapidly increasing. There has been considerable discussion as to the source of the tape-worm so commonly met with, especially on the Belgian and Swiss frontiers, and the Mediterranean shore. Berenger Feraud maintains that tape-worm is chiefly derived from beef, while Colin insists that the pig and the cow are equally prolific sources of this parasite. He claims to have discovered, also, that both these animals are infected by some species of cysticercus, so that it is impossible to tell by examination of the worm whether it is derived from the cow or the pig. Colin also calls attention to the great frequency with which cysticerci are to be found in the flesh sold in public markets. If a similar investigation were made in this country, it would doubtless show that tape-worm is increasing in the United States with fully as great rapidity as in France, since there is practically no system of meat inspection in this country capable of protecting, even to a slight degree, more than a very small proportion of the population. The consequence is, that not only is the flesh of animals infected with the embryos of tape-worm frequently eaten, thus establishing the disease in human alimentary canals, but infected persons are going about scattering the eggs of the parasite by the million, infecting water-courses, through sewerage systems, and thus rapidly multiplying the disease in domestic animals which are used for food, so that a vicious circle is formed, by which the disease is bound to increase more and more. This is only one of the grave questions relating to the food-supply, and it should be seriously considered by our legislative sanitary authorities, for it is certainly one which demands attention.—*The Bacteriological World.*

A Quick Method of Distinguishing the Comma Bacillus from Other Micro-Organisms.—It is important that Asiatic cholera should be recognized quickly, so that means for its prevention may be used, and any simple test which will enable a medical man to distinguish between ordinary cholera nostras or summer diarrhœa and the graver Asiatic cholera is of importance. A small quantity of the suspected stools is taken, and a plate cultivation made in the usual way. After twenty-four hours several colonies of bacteria will have developed, and one or more of these colonies is transferred to a tube containing nutritive bouillon containing peptone (ordinary nutritive gelatine will do equally well). The tubes are then placed in the incubator for twelve hours at 30° C., and a culture got which is treated with pure sulphuric acid free from nitrites, when there will appear in the culture a reddish-violet or purplish-red color. This color is not got

with Finkler's, Emmerich's, and other intestinal bacteria usually classed with the true cholera bacilli. Fraënkel says: "Bouillon cultures exhibit the reaction very distinctly after remaining from ten to twelve hours in the incubator, while the gelatine cultures furnish it only after some days, whenever liquefaction has attached the greater part of the culture medium." The explanation of this reaction is, according to Salkowski, that it is the common indol reaction, the indol being formed from the albuminates in the cholera cultures. The nitrates present in the salt and peptone, as also in the gelatine, are reduced by the cholera bacilli, and this affords us a quick method of distinguishing the cholera bacilli from other micro-organisms. The vibrio of Metschnikoff, which is found in the intestinal canal of poultry, also gives this reaction, but its growth on a gelatine plate is altogether different from that of Koch's comma bacillus. On developing these two growths in tubes containing bouillon or sterile soup a marked difference is seen, as the bouillon in which the true cholera bacillus is growing, keeps clear for a long time, and does not change; while the bouillon with the vibrio Metschnikoff becomes grayish-white and very cloudy after a short time.—*The Sanitary Journal.*

Treatment of Insomnia.—Dr. Collins, of New York, contrasts the action of chloralamid and sulfonal in the treatment of insomnia, and arrives at the following conclusions: 1. Chloralamid is a safe, and one of the most reliable, hypnotics 2. It is not ordinarily followed by distressing after-symptoms, particularly headache. 3. It is especially valuable as a hypnotic where pain is a potent factor, but not violent. 4. In cases of insomnia, where there is excessive activity of the brain, it is also useful. 5. On account of its stimulating activity of the respiratory function, it is the hypnotic *par excellence* in nervous exhaustion, associated with an asthenic condition of respiration and symptom complex indirectly dependent upon this, brought about by defective oxidation and the formation of unstaple chemical compounds in the system. 6. On account of its very slight action in depressing the circulation it can be given, in diseases associated with a weak heart, with greater safety than most other hypnotics, not excepting chloral itself. 7. It is conveniently administered in the shape of an elixir, and this overcomes the need of dissolving it. 8. Its dose is from one to three scruples, administered one hour before sleep is desired, and this should not be repeated within two hours, for occasionally the action of the drug is delayed. Sulfonal is preferred when we wish to get very rapid action. It should be given dissolved in boiling water, taken as hot as possible. In this way it is at once absorbed, sleep frequently occurring in from fifteen to twenty minutes. The disadvantages of sulfonal are that the patient is liable to form the sulfonal habit, and that its effects last through part of the following day.—*Journal of Nervous and Mental Disease.*

Resorcin in Ulcer of the Stomach.—Dr. Pope reports sixteen cases of ulcer of the stomach treated satisfactorily with resorcin. He concluded to use it because it was analgesic, antiseptic, and hæmostatic, all these conditions being present in so many of the cases. He gave five-grain doses dissolved in one ounce of water, when the stomach was empty. It stops the pain at once and controls the sensitiveness of the stomach, enabling it to retain food nicely. It has no influence in reflex nervous vomiting. The author insisted upon rest in bed in severe cases, and restricted the diet to milk, predigested in some cases. He did not have to use suppositories or food per rectum, in any case.—*Chicago Medical Times.*

Filtered or Boiled Water?—Martin asserts that many filters, so far from separating the bacteria, may even make the water richer in these organisms. Boiled water has lost its carbonic-acid gas, and the salts of lime and magnesia are precipitated. The taste is flat, although on standing in a cool place it reabsorbs the greater portion of the lost gas. Even boiled water ought not to be long preserved. The problem may be solved by heating the water without loss of air, cooling it mechanically, and adding oxygen by means of an air-pump. It can also be boiled in closed bottles. Investigations have shown that the slight differences observed in the chemical composition of the water before and after sterilization have not altered its potability. With a filter, one can drink only the water of a known source. With boiling, one can use any water. Boiling should be the procedure of choice as soon as any suspicion arises. It should be the rule, especially in large cities, during the progress of any epidemic.—*Gazette Hebdomadaire.*

Rapidly Fatal Leukæmia after Traumatism.—Dr. Greiwe reports the case of a locksmith, twenty-eight years of age, previously in apparently perfect health, who complained of severe pain in the left hypochondrium after having lifted an unusually heavy weight. One day later hemorrhage from the mouth took place, and this was repeated on the following day. The patient had lived amid favorable conditions, and had always had a sufficiency of good food; but he was intensely anæmic, and presented numerous subcutaneous extravasations of blood, which he had observed but had ascribed to injuries received in his work. There was continuous bleeding from the gums. The case was thought to be one of scorbutus. An examination of the blood, however, revealed the existence of lymphatic leukæmia, large lymphocytes predominating. Further examination now showed that the cervical, brachial, inguinal, and axillary lymphatic glands were slightly enlarged and sensitive to pressure. The spleen and liver were also found to be enlarged. Hemorrhage from the nose and mouth was repeated; new subcutaneous extravasations occurred, and the patient died of asthenia on the tenth day after the injury. The findings at the autopsy confirmed the diagnosis of leukæmia. The author holds that the trauma did not act as the cause of the disease, but only served to call into activity a previously latent condition.—*Berliner Klinische Wochenschrift.*

Medical Treatment of Rectal Cancer.—The question of medical treatment of cancer of the rectum, in contradistinction to surgical procedure, is an interesting one, seeing that the latter is of so little promise in many cases, and that a very short immunity only from recurrence is obtained after running the gauntlet of a severe surgical operation. For such cases, where the disease is advanced and the progress slow, M. Dujardin-Beaumetz has devised a plan of treatment of which he reports favorably, and which he credits with being able to prolong the patient's life longer than could be hoped for after an operation, even when successful. With this end he has recourse to intestinal washings with antiseptic solutions, so as to arrest, or at least diminish, the progress of the malady by removing the pus and secretions frequently. A solution of naphthol—ten to twenty centigrammes per cent.—is what he advises. In addition to this he disinfects the intestinal canal by exhibiting salol or benzonaphthol with bicarbonate of soda, in wafers by the mouth. Laxatives must also be given to prevent any accumulation in the colon, and M. Beaumetz is of opinion that a diet consisting largely of vegetables is also advisable. He has at present under observation three patients suffering from rectal cancer, who for the last three years have been subjected to this method of treatment, and who have even gained in flesh. He is satisfied that the method is superior to extirpation.—*Lancet.*

An Aged Actor.—The author of a book recently published, entitled "The Gossip of the Century," writes that he had often heard his father describe the performance of *Shylock* by Macklin when the actor was in his one hundredth year. This occurred May 7, 1789. Macklin was born in 1690, and survived his remarkable presentation of *Shylock* eight years.

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OPERATIONS ON THE AGED.

SOME years ago Professor, afterward Sir George, Humphry, of Cambridge, in his study of the statistics furnished by a collective investigation of old age, had his attention drawn to the great recuperative powers of those long past middle life, and was led to make this a subject of more particular investigation. He found many striking instances of the rapid healing of ulcers, wounds, and fractures in the aged, which caused him to modify the opinion which he had hitherto shared with the profession at large concerning the low reparative powers of old people. He studied the statistics of various illnesses also, and found that the instances of recovery from acute diseases and their effects were surprisingly numerous among the aged. Indeed, Sir George concluded that the tendency of physician and friends to give up all hope when disease seized upon an individual seventy years of age and over, was without foundation in fact, and insisted that life could often be prolonged in such cases even when they seemed to be most desperate.

A similar subject, namely, the recuperative powers of the aged after surgical operation, has recently been investigated by Dr. Blum, who has published the results of his studies in the *Archives Générales de Médecine* for July, 1892. He has collected a series of fourteen major operations upon old people, only one of which had a fatal issue, and concludes from his analysis of these cases that the chances of success are fully as great in the aged as in those of fewer years. The result, he says, depends less upon the age of the patient than it does upon his previous condition of health, and he counsels operation not only when life is directly menaced, as in the case of strangulated hernia, for example, but even when there is less imminent danger, as when the presence of a slowly growing tumor points to a fatal result in the more or less distant future.

There are, of course, certain special precautions to be observed in operating upon the very old, which may be omitted in the case of the more robust. For example, it is advisable, when possible, to devote some little time to toning up the general system by food and the judicious use of tonic remedies. General anæsthesia should also be avoided when practicable, and fortunately this is often possible, as the aged are less susceptible to pain than the young and middle-aged. Extra precautions should also be taken to avoid chilling of the patient by unnecessary exposure of the surface of the body beyond the actual area of operation. Another practical point to be borne in mind when preparing for operation on the aged, is that the nervous system in general, and with it the vaso-motor, is less tolerant of insult, hence the attempt to obtain a bloodless field of operation is inadvisable. The pressure of the Esmarch bandage may lead to vaso-motor paralysis, and a secondary hemorrhage may be the result—a hemorrhage difficult of control by reason of the atheromatous condition of the arteries. Finally, great care should be paid to the after-treatment of these aged patients, and the surgeon should see to it that they receive plenty of nourishing and easily digestible food, the "feeding-up" process beginning at once as soon as the operation is concluded and the immediate shock of it is over.

It is well to bear the fact in mind that an old man or an old woman need not suffer from a chronic, and probably eventually fatal, surgical malady for long years, simply through fear that any attempt at relief would shorten life. The sufferings of the aged seem more pitiful than those of the younger man, and it is one of the greatest privileges of the surgeon to be able to relieve them. Now, indeed, he need not refuse his aid in all but the most desperate cases, but may operate, observing the special precautions above referred to, when the object is not purely to save life, but simply to relieve suffering and to render life less of a burden.

DOCTORS ON THE CONGO.

IT is a common saying among unthinking people that medical science has, after all, done little for humanity; that disease still runs its course with little or no check, notwithstanding the so-called progress of medicine. It is easy enough to refute such statements and to show by elaborate statistics that the science of the prevention of disease has made gigantic strides in these latter days, even though that of cure seems to the superficial observer to be lagging. But we need but one small incident to show what medicine—the science of medicine—may accomplish in the economy of human life. We find it recounted briefly as an item of news in the *Sun* of recent date.

When the building of the railroad in the Upper Congo was begun, one of the first cares of the company undertaking it was the organization of a medical staff. Besides the many hundreds of native laborers there were some two hundred and fifty white men in the employ of the company, and to look after the health of these a staff of five medical men was organized. The medical officers were given large powers in the way of regulation of the daily lives of the employees of the company, and in addition to the care of the sick, they saw to it that the buildings erected were built on correct sanitary principles. The laborers' camps, which from the nature of the work were being constantly advanced along the line of the growing road, were also carefully inspected from time to time, and maintained in as hygienic a condition as possible. The water-supply also was looked after, the use of the Congo River water being prohibited, and, in order to diminish as far as possible the danger of malarial infection, only boiled water was allowed for drinking purposes. A commodious hospital was erected at Matadi, and all the sick were at once removed there for

treatment. One of the staff was also always present in the laborers' camps to take care of all emergency cases, whether medical or surgical.

It might be thought that the company was very philanthropic, or that it felt a truly paternal solicitude for those in its employ. Possibly. But it found its substantial reward in the diminished sickness of the men, and in the consequent increased efficiency of the force, for the saving in time thus brought about paid many times over the salaries of the medical staff. The health of the white men has been fairly good in spite of the climate and of the fact that a pre-eminently malarious country was being broken into for the first time, and the number of deaths among them has been proportionally far below that of any other body of Europeans residing on the Congo in previous years. The health of the native workmen has also been very much above the average.

Simple arguments are sometimes more effective than elaborate ones, and we have seen none recently which shows more forcibly the good done by medical science than this brief tale of the work of the doctors in the centre of the Dark Continent.

THOMAS NEILL CREAM, THE STRYCHNINE FIEND.

The trial and condemnation of this man for poisoning prostitutes with strychnine has given rise to a good deal of medico legal discussion. Regarding the man's insanity, it seems to be agreed that, while such a person could hardly have the same kind of mind as a sane person, yet he knew the nature of his acts, was not influenced by any delusion, and was legally responsible. Such persons must be either destroyed or forever put away from society.

Cream's various experiments in strychnine poisoning seem to have begun in Chicago eleven years ago. At his trial for murder then, it was proved that the prisoner, acting in concert with a Mrs. Stott, with whom he had criminal relations, filled capsules with strychnine and caused these capsules to be given to Mrs. Stott's husband, who was afflicted with epilepsy; the death that followed was ascribed to a "fit." At the earnest solicitation of "Cream," or Neill, who desired a correct diagnosis for the purpose of blackmail, the body was exhumed, and 3½ grains of strychnine found therein.

In the recent trial the defence attempted to make a point with regard to the length of time required for strychnine to act. The evidence seemed to show that the poison was given to Clover a little before 10 P.M., and at 3 A.M. she aroused the household by her screams. It is probable enough that the woman would suffer some little time in comparative silence, hence all that can be said is that the symptoms began between four and five hours after the dose. In recorded cases in which the strychnine was given in solution or as a powder, as a rule the symptoms have come on, as Dr. Stevenson in his evidence stated, within the hour. In a case recorded by Barker, the symptoms commenced within three minutes, but, on the other hand, there are recorded cases in which three hours have elapsed. The defence also raised the question as to the rigidity of the body after death. It was affirmed, says the *British Medical Journal*, that a person poisoned by strychnine would be after death preternaturally rigid, and there was a suggestion that that rigidity would be more or less permanent. It is accepted that, as a rule, *post mortem* rigidity after strychnine poisoning sets in rapidly; but, on the other hand, it has been known to disappear within twenty-four hours. In a great proportion of the cases recorded of death by strychnine there is no special mention of rigidity, the natural inference being that the observers noticed nothing unusual—nothing different from the majority of ordinary *post-mortem* appearances.

On the whole the points which the defence attempted to make were thoroughly met, and the verdict appears to have been fully justified.

GENIUS AND INSANITY.

Some poets speak the truth even when writing prose. In the October *Century*, Mr. E. C. Stedman says of *The Faculty Divine*: "Genius of the more universal type is marked by a sound and healthy judgment. You may dismiss with small respect the notion of Fairfield, Lombroso, and their like, that genius is the symptom of a neurotic disorder, that all who exhibit it are more or less mad. This generalization involves a misconception of the term: they apply it to the *abnormal excess, the morbid action of a special faculty*, while true genius consists in the creative gift of one or more faculties at the highest, sustained by the same co-operation of the possessor's other physical and mental endowments."

INSOMNIA AND MENTAL DEPRESSION.

A promising young English writer, Amy Levy, has given a realistic picture of insomnia and mental depression, in some verses designed for the epitaph of a commonplace person who died in bed. Every physician will do well to read, mark, learn, and inwardly digest them, in order to gain a little insight into the mental state due to exhaustion of nerve-centres, that gives a sense of complete isolation equal to the loneliness of the shipwrecked in mid-ocean. The earthly loneliness of Amy Levy ended less than four years ago. She committed suicide shortly after the appearance of a powerful sketch called "Ruben Sachs," in which are handled without gloves the failings of the modern Hebrews, her own people. Here are the lines concerning the commonplace person:

> He will never lie on his couch awake,
> Wide-eyed, tearless, till dim daybreak;
> Never again will he smile and smile,
> When his heart is breaking all the while;
> He will never stretch out his hands in vain,
> Groping and groping—never again;
> Never ask for bread, get a stone instead;
> Never pretend that the stone is bread;
> Never sway and sway 'twixt the false and true,
> Weighing and noting the long hours through;
> Never ache and ache with the choked-up sighs;
> This is the end of him—here he lies.

In mental depression, psychic aid must come from the physician himself. He must be at once the doctor of the soul and the doctor of the body. The sensitive are never sensible when overthrown by the affairs of daily life. They need help from others in order to get the correct proportions of things, help having for chief ingredients earnestness, sympathy, firmness, and good judgment. All this need not necessarily be expressed in words, but it

must constitute an atmosphere of cheerfulness and goodwill. And if by chance the physician in charge knows more of knives and chemical compounds than of the human mind, let him frankly confess it, remembering that one star differeth from another. It is well to recognize the fact that neurasthenia may complicate some obscure condition that causes death, and that mental depression in itself may lead to suicide. Whether life is worth living is a question with everyone at times. When decided permanently in the negative by the weak of physique and depressed in spirit, it is wise to consider the possibilities of the situation.

THE TIE THAT BINDS, AND CHRISTIAN SCIENCE.

We are compelled regretfully to chronicle the sorrowful fact that Christian Science has been grossly insulted by the law, a certain judge having ruled that it may be, under certain conditions, inimical to health and a sound mind. It appears that the divorce law in one of the New England States permits of the dissolution of the marriage tie when one of the parties acts in such a way as to endanger the health, mental or physical, of the other. Basely taking advantage of this provision of the law, a man, not long ago, applied for a divorce on the ground that his wife was a convert to Christian Science and practised faith-curing. It was not held that she had tried her science on him, but he disapproved strongly of her latest fad, and alleged that her espousal of the new doctrine had made him unhappy, glum, and generally cranky. He produced an array of medical expert testimony to the fact of his despondency and growing bad temper, and the witnesses stated as their belief that further brooding on the Christian scientific doings of his wife would imperil his reason as well as endanger his health. His wife said he was only "in belief" and she thought that a little application of her science, *secundum artem*, would take that belief out of him in short measure. Her diagnosis was not accepted, however, and the divorce was granted forthwith. There is, therefore, now, legal precedent for considering a belief in Christian Science a possible cause for divorce, for this decision of the judge places its practice, *quoad* divorce, on a level with incompatibility of temperament and other things.

SEA-SICKNESS.

One of the most obstinate of ailments and most trying to the self-sufficiency of the infallible therapeutist is sea-sickness. This is not because there are not enough remedies for it, for if only one-twentieth of those recommended could be relied upon as efficient the malady would become but a memory and the sea would be robbed of its greatest of terrors. But we are not going to inflict a treatise on sea-sickness upon the patient reader, wishing simply to put on record, for the benefit of American voyagers, a preventive measure proposed by Dr. Ames Brunton in the *British Medical Journal* of recent date. This consists in the applying of a leather strap round the lower part of the thorax and epigastrium. It is put on previous to going on board, and is drawn very tight, and must be kept on till the traveller gains his "sea-legs." This hint, Dr. Brunton says, he "obtained from a gentleman who was previously a martyr to sea-sickness, but now in his frequent journeys across the Channel makes them with comfort and triumph, and, needless to say, perfect immunity from sickness. If necessary, a pad over the epigastrium can be added. It is possible that the compression over the liver may have something to do with the beneficial action of the strapping, which prevents the sinking which heralds the nausea."

We have no fault to find with the simplicity of this means, and the writer claims that it is as efficient as simple, being "in the great majority of cases an absolute preventive of sea-sickness." Possibly it is, yet we cannot but wonder why, then, our sweet sisters, whose dear little epigastria are tightly, and often even painfully, compressed by the cruel corset, should suffer so universally from this most distressing and unromantic of ills.

News of the Week.

The Wesley M. Carpenter Lecture.—The Wesley M. Carpenter lecture will be delivered on Tuesday evening, November 22d, at eight o'clock, at the New York Academy of Medicine, 17, 19, and 21 West Forty-third Street, by J. J. Kinyoun, M.D., Marine Hospital Service, Washington, D.C. Subject: "Modern Treatment of the Infected Vessel." Fellows of the Academy and the profession in general are cordially invited to attend.

Eleventh International Medical Congress. — The American Sub-Committee has the following membership: W. T. Briggs, Nashville, Tenn.; H. P. Bowditch, Boston, Mass.; S. C. Busey, Washington, D.C.; C. Cushing, San Francisco, Cal.; N. S. Davis, Chicago, Ill.; A. Jacobi, New York, chairman; Norman W. Kingsley, D.D.S., New York; Wm. Osler, Baltimore, Md.; Wm. Pepper, Philadelphia, Pa.; F. Peyre Porcher, Charleston, S.C.; Charles A. L. Reed, Cincinnati, O.; D. B. St. John Roosa, New York; Alex. J. C. Skene, Brooklyn, N. Y.; and James Stewart, Montreal, Canada. The secretary general informs the committee that the French Railway Company has offered to the members of the Congress a reduction of fifty per cent. on its fare.

Dr. William C. Jarvis, of New York, has been elected Professor of Laryngology in the Medical Department of the University of Vermont.

The Alvarenga Prize for 1893.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1893, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the secretary of the college on or before May 1, 1893. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within it the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be

returned upon application within three months after the award. The Alvarenga prize for 1892 has been awarded to Dr. R. H. L. Bibb, of Saltillo, Mexico, for his essay entitled, "Observations on the Nature of Leprosy."

The Examinations for the Medical Department of the United States Army.—The examination of candidates for commissions in the medical department of the army, recently held at the army headquarters in this city, was not, says a writer in *The Tribune*, prolific in its results. Only four of the twenty-two who appeared before the Medical Board succeeded in filling the rigid requirements, professional and physical, for appointment as assistant surgeons. The officials of the Medical Department are gratified for the few successful candidates, considering their high qualifications, but they are also disappointed at the small percentage of the successful ones. On the other hand, the applicants who failed in the examinations, and also their friends, feel their disappointment more keenly and complain bitterly about the severity of the examination. The Surgeon General's Department, however, prefers to go shorthanded than reduce the standard of the examination, and soon another examination will be ordered to fill the six vacancies still remaining.

Working for Good Roads.—The following petition is being widely circulated, and it is hoped that at least a million signatures to it will be obtained before the first of the year :

"*To the Honorable Senate and House of Representatives in Congress assembled :*

"We, the undersigned, citizens of the United States, hereby most respectfully petition that there be founded in the city of Washington, in the District of Columbia, a Road Department, similar to the Agricultural Department, for the purpose of promoting knowledge in the art of constructing and maintaining roads ; and we ask that in such department provision be made for teaching students so that they may become skilled road engineers. In connection with this Road Department we request that there be established a permanent Exhibit, in which shall be shown sections of roads illustrating various methods of construction, and also the best road materials and machinery.

"We further petition that Congress appropriate funds sufficient to erect a building at the World's Columbian Exposition for the purpose of a comprehensive road exhibit."

Those desiring blanks to sign may obtain them from Mr. Albert A. Pope, P. O. Box B, Boston, Mass.

To Fast for a Medical College.—Arthur W. Wuellmeas, a Frenchman, will begin a fifty-day fast in Cleveland, O., under the auspices of the Western Reserve University Medical College. Wuellmeas has fasted four times before. The first was in Chicago, in 1890, when he went twenty-one days without taking food. Later the same year, he fasted thirty days at Detroit. We trust that the good faster may give the students some points for post-graduate experiences.

Leprosy is a disease which seems to stimulate with especial intensity the philanthropic imagination. Father Damien was made quite a saint, though, barring sentiment, he could not have been a very pleasant or altogether heroic man. Sister Rose Gertrude set out with a great flourish of trumpets to relieve the lepers of Hawaii, but soon dropped into the arms of matrimony in a most commonplace father. The work of Miss Kate Marsden, however, among the Siberian lepers opened a new field, and appears to have been arduous, self-sacrificing, and fruitful. She comes to America soon, to present her cause to us.

The Diagnosis was Deferred.—"Madame," said the doctor, in response to the earnest inquiry of his patient, "you are suffering from a complication of disorders, the exact nature of which can only be ascertained at the post-mortem."

Swallowed Cholera Bacilli.—Professor Pettenkofer and Professor Emmerich, who have been conducting a series of experiments with cholera bacilli, say that, as far as they have been able to learn, local, and not individual conditions, engender the epidemic. Both men have swallowed large numbers of cholera bacilli, and yet, but for slight diarrhœa, neither of them suffered any inconvenience. The result of the experiments was a surprise to Professor Pettenkofer, whose theory formerly was that the taking of any large number of comma bacilli into the system would be followed by cholera.

The Quarantine in this Port against cholera is likely to last for a long time, or until no more cases of the disease occur in European ports.

International Monument to Semmelweis.—A meeting was held in London recently, under the presidency of Sir Andrew Clark, the object of which was to combine with all admirers of Semmelweis—"the father of antiseptic midwifery"—to raise in his native city of Buda-Pesth a monument to this great pioneer of antisepticism. It is nearly fifty years since Semmelweis demonstrated the septicæmic nature of puerperal fever, and for many years his work was appreciated by only a few followers and his name was almost forgotten. His professional brethren in Hungary have now determined to raise by international subscription a memorial to their distinguished countryman, who, like many a martyr, was not appreciated while he lived.

A Curious Bequest.—Dr. W. F. Cumming has bequeathed the sum of $3,000 to the Edinburgh Royal Infirmary, the income to be used in purchasing tobacco and snuff for pauper patients.

Monument to the "Reviver of Transfusion."—A month ago, at Domène, a monument erected in memory of Dr. Marmonier, senior, who for nearly half a century has practised medicine in that little town, was unveiled in the presence of a large number of doctors. The monument is in the form of a beautiful fountain. From the centre of the basin rises a pyramid surmounted by a bronze bust of Dr. Marmonier. Upon the principal façade is the inscription : "To Doctor Marmonier, Senior, who Revived Transfusion of the Blood." ("Au Docteur Marmonier Père, Rénovateur de la Transfusion du Sang.")

Reappearance of La Grippe.—There is an unusual prevalence of catarrhal troubles during the present autumn, bearing a resemblance to sporadic cases of grippe, and two deaths from the latter disease have been reported.

Hypnotism has another organ, called *Zeitschrift fur Hypnotismus, Suggestion und Therapie, Suggestionslehre, und verwandte psychologische Forschungers.* It is edited by Dr. J. Grossmann, of Konitz, and published in Berlin. Paris has also its journal, and it looks as though hypnotism had come to stay.

Dr. Frederick H. Wiggin has been appointed one of the physicians of the Board of Education vice Dr. F. W. Olds, resigned.

Pharmaceutical Law in Guatemala.—At a recent meeting of the pharmacists of Guatemala, *La Escuela de Medicina* states, the governing committee directed the secretary to call the attention of the members to certain laws, the provisions of which had not been strictly observed of late. These laws provide that pharmacists shall not dispense, without a physician's prescription, any drugs except those in common use in domestic medicine, and which even physicians are accustomed to prescribe verbally. Even on a prescription they must not dispense any poison in large dose without previously calling upon the physician and ascertaining that the prescription is written as intended. The same precaution shall be taken when incompatibles are prescribed in the same mixture. Prescriptions written more than a week before being presented shall not be compounded. Finally, no druggist is allowed, without the permission of the prescriber, to give a copy of any prescription to any person whomsoever, unless ordered to do so by the authorities.

A Practical Transilluminator.—In the article on this subject, by Dr. Chevalier Jackson, in the issue for October 29th, in the ninth line from the end, "single-current" should read "single curved."

"**La Escuela de Medicina**" is the title of a new journal, published in Guatemala, devoted to the interests of the physicians and pharmacists of that republic. Various medical journals have been started in that uneasy little State since 1855, but have ceased to exist one after the other, some for political reasons, others for lack of support. We hope for a longer life for our new contemporary, and we hasten to extend to the distinguished editor the assurances of our esteemed consideration and best wishes for success in his noble undertaking.

Happy London.—The number of medical practitioners in London, in proportion to the population, is only about one to each thousand persons. The average clientèle of a practitioner in that blessed city is, therefore, at least twice the size of his New York brother. The number of dispensary patients in London is smaller in comparison with the population than it is in New York. And yet the ungrateful Londoner complains that the profession is overcrowded!

The Medical School of the Tokio Charity Hospital began its winter session on September 15th. The progressive character of the school is evidenced by the fact that women are admitted on an equality with men.

Water at the Fair.—The citizens of Chicago or, at least, the World's Fair Commissioners, have discovered the fact that the drinking-water supplied to their town is not exactly to be commended as a hygienic beverage. They have made an arrangement with a natural spring company, in Wisconsin, to supply the drinking water for the Fair grounds, and as the water is obtained over a hundred miles from Chicago, it may be pretty confidently pronounced drinkable.

The Sabathu Leper Asylum.—We have received the report of this institution for the year 1891, during which year eighty-seven lepers found refuge in the asylum. Dr. M. B. Carleton, the superintendent, would be glad to answer any inquiries concerning the disease that may be addressed to him. He would be glad also to receive any donations in aid of the asylum. The cost per annum for each leper is about $25. Dr. Carleton's address is Sabathu, North India.

Obituary.

GEORGE ROSS, M.A., M.D.,

VICE-DEAN OF THE MEDICAL FACULTY OF MCGILL COLLEGE, MONTREAL, CANADA.

Dr. George Ross, aged forty-seven years, died at his residence, Montreal, on Tuesday, November 8th. He had an attack of paralysis two years ago, and had been in failing health ever since, being confined to his room for the past four months.

Dr. Ross was one of the most distinguished members of the profession in Canada. He was born in Montreal, and received his education in his native city, graduating at McGill College in 1866. After three years' private practice in Montreal he was appointed professor of Hygiene and Public Health at McGill, and in the following year took the chair of Clinical Medicine. He succeeded the late Dr. Howard in 1889 as professor of Practice of Medicine, a position he filled with great acceptance. He was for many years on the editorial staff of the *Montreal Medical Journal.*

Dr. Ross was a prominent member of many medical associations, was president of the Canadian Medical Association in 1888, and several times president of the local association in Montreal. He was governor of McGill University, which he represented as a member of the College of Physicians of the Province of Quebec.

To medical literature Dr. Ross contributed many valuable works in the way of papers, lectures, and articles published in medical journals, besides his well-known contributions to many of the extensive systems of medicine published in recent years. As a consultant he had a national reputation, and his successful professional career was so free from blemish that it can well serve as a model for careful imitation.

The death of Dr. George Ross removes from the medical profession of Canada one of its most honored and beloved members. Although comparatively a young man, the twenty-six years of his life as a medical practitioner furnish the much-needed lesson that the highest aims of human endeavor are most effectually realized in the good we can do to others. Dr. Ross's rare and estimable qualifications as a high-minded physician, and his lovable character as a man, when his friendship was secured, won for him the respect and esteem of all who delight to honor an educated and cultivated gentleman. His medical confrères in Montreal had for him more than an ordinary affection, and will long cherish his memory as that of a wise physician and a chivalrous gentleman, whose name will ever remain a synonym for all that is noblest and best in our profession.

Electrocution in France.—A motion has been made in the French Senate to substitute death by electricity for the guillotine. The member who proposed it did so on the ground that this mode of inflicting the death penalty had been eminently successful in New York State.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, November 3, 1892.

ALFRED L. LOOMIS, M.D., PRESIDENT, IN THE CHAIR.

Abnormal Conditions of Organs and Tissues Contained within the Abdominal Cavity which Simulate and may be Mistaken for Diseases of the Uterus and its Appendages.—DR. W. GILL WYLIE said his paper would not follow strictly the title given it, as it was his intention to refer to some of the changes in gynecological practice and the causes leading thereto the past ten years. Reference was made to some papers he had read eight years or more ago, predicting some of the changes which would be made and in line with views which he then expressed. For instance, a great deal of discussion and work centred some years ago about what was called chronic pelvic cellulitis—a condition which practically did not exist, the real state being, as a rule where interference was called for, disease of the tubes and ovaries. This view, expressed by him more than eight years ago, was generally accepted to-day. He had also predicted that before many years gynecologists would come to recognize the exaggerated importance which they had attributed to uterine displacement. Later, in a paper on anteflexions, he had stated that the displacement was not the cause of most of the symptoms, but rather a chronic endometritis and indurated state at the cervix and above, and that the treatment called for dilatation and drainage rather than replacement. While text books still gave some importance to cellulitis and displacements, it should be remembered that writers of text-books were not always so progressive as those who were more noted for practice than for literary tendencies. Text books did not reflect present views so well as did society discussions and monographs.

The author then took up the consideration of certain facts which laparotomy practice had incidentally enabled him to establish. One was that the gynecologist who undertook to cure minor uterine diseases should have a good knowledge of rectal diseases, and know that these, and also changes in other organs, might produce symptoms heretofore regarded as belonging to diseases of the genitalia alone. Prolapsus of the intestines, displacement of the kidneys, fecal impaction, etc., might cause symptoms which one might be misled to regard as of uterine origin alone. In nineteen cases out of twenty of retroversion of the uterus, with symptoms, there was salpingitis or ovaritis, and if it were possible to break up the adhesions without opening the belly for the purpose of replacing the uterus, it would result in an acute attack of peritonitis. In many of the cases the omentum and intestines were prolapsed, crowding into the pelvis. There was also likely in such cases to be displacement of the right kidney. In many cases on opening the abdomen he had found the omentum six to twelve inches longer than was supposed to be normal, the blood-vessels enormously enlarged, the whole constituting a thick mass like a tumor. Among the rectal conditions, simple or complicated by displacement of the abdominal contents, which caused symptoms simulating uterine disease, were a tendency to crack at the anus on slight pressure, the presence of hæmorrhoids, hyperæsthetic spots on the mucous membrane, an irritable condition of the sphincter with pressure upon the diseased membrane causing great pain; the sphincter refusing to open caused pain on defecation, so that the patient was led to put the act off as long as possible. The fæces came away in round, hard balls, or there might be alternate constipation and diarrhœal tendency, without, however, complete clearance of the bowel.

He had often found some abnormal condition of the rectum, a hyperæsthetic spot about the cæcum, displacement of the stomach, intestines, omentum, or kidneys, in cases that previously had been treated for uterine trouble alone, which in reality had little to do with causing the symptoms. It was his custom, when the symptoms were not evidently due to some abnormal state of the generative organs, to send the patient from his examining-table to a room where she could strip completely, go to bed, and be in shape for thorough examination of all the abdominal organs. If necessary, he even gave ether in order to determine the exact state of the kidneys, etc. Movable kidney was present in twenty to thirty per cent. of the women seen in his private practice. To determine the position and size of the stomach and colon, it was only necessary to fill them with air. He would not do nephrorrhaphy for movable kidney until uterine and rectal troubles had been corrected. The time would come, sooner or later, when a thorough study would have to be made of the rectum and kidneys by all students of gynecology.

Has a Woman Pelvic Cellular Tissue?—DR. PAUL F. MUNDÉ said he agreed with much that the author had written, but there was one difference between them—the author seemed to think there was no pelvic cellular tissue. If there was, how could it be otherwise than that sometimes it was the seat of cellulitis? A woman has other organs besides pelvic organs. He was glad Dr. Wylie had brought to the attention of a general medical society the fact that a woman had other organs besides pelvic organs. There was a great deal too much tendency to attribute all of woman's ills to her genitals. The author had referred to a number of conditions which might simulate disease of the sexual organs, and Dr. Mundé said he had seen examples of those conditions. Besides these he might mention some others. Proctitis was not unusually the cause of symptoms simulating uterine disease. Painful micturition might be attributed to uterine trouble when really due to fissure of the urethra or caruncle. Pain in the back might be due to a disease of the coccyx. Pain across the abdomen, extending from side to side, below the umbilicus, was often present in women of constipated habits, and due to a colitis. Dilatation of the stomach produced symptoms which might be mistaken for disease of the genitals. As to the kidney, more frequently would the ureter be found at fault. He related cases where a stone in the ureter has misled the doctor to treat the genitals. There might be displacement of the liver. Accumulation of fecal matter had been mistaken by him and others for tumor of the uterus or its appendages; the same was true of tumor of the liver, of cyst of the mesocolon, tubercular peritonitis, etc. As to displacements of the uterus, he said they in themselves amounted to little, it was the adhesions and complications that made them important, although the complications might require replacement of the uterus for their correction.

DR. H. J. BOLDT thought that by the present time gynecologists, as well as general practitioners, knew there was something in woman besides the uterus and its appendages. Of displacements causing symptoms simulating those of uterine disease, movable kidney was most important. Low displacement of the right kidney caused not only reflex symptoms, but also constant pain except in the horizontal position. A chronic inflammatory state about the vermiform appendix was sometimes the cause of symptoms which might be mistaken for genital trouble. A painful state of the abdominal muscles was liable to be mistaken for pelvic difficulty. He had known them to form knots or tumors which simulated tumors more deeply situated. The ureters were easily palpated in subjects whose muscles were fully relaxed, and were often found of double the normal thickness, and the cause of bladder symptoms.

Tumors of the Omentum Mistaken for Pelvic Tumors.—DR. EDEBOHLS had elsewhere presented specimens illustrating a hypertrophied, congested, and œdematous condition of the omentum, forming tumors which had

been diagnosticated as fibroid tumors of the uterus. He had seen two cases of misplaced or wandering liver, causing symptoms much like those attending uterine disease. The conclusions to be drawn from the discussion was that to-day the gynecologist had also to be a good general practitioner. He would go further than Dr. Wylie and commence the examination of all cases at the abdominal organs, proceeding thence to the pelvic organs, since, if one begin with the latter he might be satisfied with what he there found, and not know of the existence of movable kidney, etc.

Uterine Displacement Does Produce Symptoms.—Dr. A. P. Dudley said he still believed uterine displacement in itself might produce reflex troubles of more or less serious nature. This could be explained by the disturbance of the circulation brought about by displacement. He further placed stress upon adhesions as a cause of symptoms. He had seen some cases of cancer of the pancreas which had given a history which might have been supposed due to pelvic disease. Displacement of the spleen might simulate ovarian trouble; so might disease of the gall-bladder. Syphilitic disease of the rectum, high behind the uterus, had been mistaken for uterine disease, abnormal shortening of the utero-sacral ligaments sometimes caused traction upon the bladder and painful micturition. He had seen several cases of papilloma of the omentum and mesentery simulate ovarian trouble. Abdominal hernia and angioma ought also to be mentioned.

Movable Kidney Seldom Found at Autopsy.—The President said it would seem from the discussion that movable kidney was very common, yet about three years ago he requested the curators of Bellevue Hospital to make special examination with regard to this point at autopsies, and thus far they had found movable kidney in only three cases.

Dr. Wylie said, in closing, that he did not deny the existence of cellular tissue in the pelvis, but believed there was no such thing as chronic pelvic cellulitis. He had purposely left out the question of abdominal tumors. Displacement of the uterus interfered with the circulation only when there were adhesions.

Regarding a tumor-like condition, or hypertrophy of the omentum, this was likely to disappear after any necessary operation on the appendages, etc., as he had proven in some cases where secondary laparotomy had been performed.

THE NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, October 26, 1892.

H. P. Loomis, M.D., President, in the Chair.

Pott's Disease, Associated with Fibrinous, Peritoneal, and Pleuritic Adhesions.—Dr. H. S. Stearns presented a specimen, showing the diseased vertebra from a case of Pott's disease. The specimen was not of special interest in itself, and his only object in presenting it was to elicit a discussion on an associated condition. The patient was a colored man, thirty-five years of age, who for three years past had suffered from pain in the back, consequent upon caries of the spine. When admitted to the hospital last May, there was considerable deformity of the spine, with partial paralysis and marked anæsthesia of the lower extremities. He died on October 25, 1892, and at the autopsy it was found that there were old fibrous adhesions in the pleural and abdominal cavities, sufficient to almost obliterate these cavities. The lungs were removed with difficulty, and the intestines were extensively matted together. There was no fluid in either cavity, and careful search failed to show any tuberculous lesions either in the intestine or in the lungs. The liver was of normal size, but was pressed upward on the right side above its normal position. There was no pus found anywhere except at the seat of the disease in the spine, where an abscess cavity was found extending up alongside of the affected vertebræ. Some of the adhesions in the peritoneal cavity were of comparatively recent formation. Dr. Stearns asked for an expression of opinion as to the cause of this fibrinous exudate.

Dr. H. M. Biggs considered the case to be one of tubercular peritonitis and pleuritis, with disappearance of the tubercular lesion and the formation of fibrous adhesions. He had long believed that there was no variety of tuberculosis in which there was such a large percentage of spontaneous recoveries as in tuberculosis of the serous membranes; indeed, he believed that this was the termination of the majority of these cases, although he could not prove the correctness of his position. The original miliary tubercles being very small, they are lost sight of when the cells undergo degeneration, only fibrous tissue remaining, and there is nothing to stamp this process as tubercular. There is no question but that we find not infrequently in the cicatrization of tubercular processes in the lungs no vestige of this process except simply fibrous tissue, what might perhaps be called an "interstitial pneumonitis," yet from the history of the case, and from the nature of the surrounding tissue, there is every reason to believe that this fibrous tissue is the result of a tubercular process.

Dr. S. T. Armstrong did not think that this view was the one generally held, and he saw no reason for expecting a different pathological lesion in tuberculosis of the serous membranes from that found in tubercular processes elsewhere. Even in the stage of degeneration, there should be a recognizable lesion. The speaker referred to a very similar case to that just reported, which he saw ten years ago. He could not recall the details of this case, but he remembered that there was no history of traumatism, and that he had looked upon the case at that time as an instance of recovery from an idiopathic peritonitis.

Dr. R. H. Sayre said that he had exhibited to the society last year a specimen taken from the spine of a boy, who at the time of his death from tuberculosis had symptoms of beginning inflammation of the spine. In this case, the intestines were matted together into large masses by adhesions, and the retro-peritoneal glands were very much enlarged, yet there were no tubercles visible to the naked eye.

Dr. W. P. Northrup referred to a case of tuberculosis which he had observed during life, and upon which he had made an autopsy. No tubercle bacilli could be demonstrated, and only a few giant-cells were found, but all the pathologists who saw the case, among others, Dr. Francis Delafield, were of the opinion that the tuberculosis was well on the road to recovery. He was inclined to endorse in the main the views expressed by Dr. Biggs.

Sudden Death from Impaction of Meat in the Larynx.—Dr. H. M. Biggs presented a larynx removed from a man who had died very suddenly, and his object in presenting it was to give greater prominence to a not uncommon cause of sudden death, namely, the lodgement of foreign bodies in the larynx. This man, while sitting in a restaurant eating soup, was observed to cough suddenly and to have a slight convulsion, and in a moment he was dead. After hearing this history, and before making the post-mortem examination, the speaker had expressed the opinion, based on a dozen or more similar cases, that death in this case was due to suffocation from the presence of a foreign body in the larynx. An important point in the history is the occurrence of a slight convulsion. At the autopsy a very large piece of meat was found so situated as to absolutely occlude the larynx. Death certainly does not take place in these cases from suffocation simply, but whether or not it was due to a reflex inhibition of the heart's action he could not say. He had seen quite a variety of foreign bodies in the air-passages; thus, in one case a collar-button formed a complete ball-valve; in another a screw was found; in a third a toy balloon had been drawn into the trachea, and was inflated with each inspiration; in still another, a bronchial

gland had caused suffocation by discharging its contents into the trachea.

Hydatid Cyst of the Liver; Staining the Hooklets of the Echinococcus.—Dr. George P. Biggs presented a specimen of hydatid cyst of the liver, removed from an Italian, aged thirty-five, who died as a result of stab-wounds of the abdomen. No history bearing upon the specimen was obtained. At the autopsy, a cystic tumor was found occupying nearly the whole of the right lobe of the liver, and measuring 12 ctm. transversely, by 10 ctm. vertically, and 9 ctm. in its antero posterior diameter. The anterior wall of the cyst was only about one and one-half millimetre in thickness, and the posterior wall only about one centimetre from the posterior surface of the liver. There were no adhesions. The cyst was very tense, and on incision, a large quantity of perfectly clear, colorless serum was discharged. The cyst was lined by a thick white membrane, and contained a large number of echinococcus cysts. Microscopical examination of the scrapings from the lining membrane showed numerous typical scolices and hooklets.

Dr. Biggs said he had accidentally discovered a method of staining these hooklets while engaged last summer in examining microscopically some pus which had been aspirated from the region of the liver for diagnostic purposes. The examination at first showed only tyrosin crystals, and a large number of degenerated pus-cells, but after staining a slide for tubercle bacilli he was surprised to find a typical echinococcus hooklet which had been stained a bright red by the eosin. It had not been visible previous to the staining, and prolonged search afterward only showed three such hooklets on this slide. The existence of a hydatid cyst was afterward proven by operation.

Polypoid Hypertrophy of the Uterine Mucous Membrane, with Epithelial Degeneration.—Dr. H. J. Boldt presented two uteri which had been removed by hysterectomy on account of this condition. Both women had passed the menopause, and both had been curetted a number of times, but in view of the recurrence of hemorrhage, and the age of the patients, and the possibility of the existence of malignant disease, he had thought it best to remove the uterus. The report of the pathologist, Dr. W. H. Porter, showed that in the first uterus there was a well-defined papillary growth, over one and one-half inch in diameter, some of the larger papillary projections extending fully one half inch beyond the original mucous surface lining the uterine cavity, while the peripheral and smaller projections were little more than microscopic points. Microscopical examination of the sections, made at right angles to the mucous lining of the uterine cavity, showed the new growth to be composed chiefly of a polypoid mass, and the papillary projections covered by a thick layer of hypertrophied and somewhat degenerated epithelium, which had constituted the original follicular structure lining the uterine cavity. There was no evidence of new follicles having been developed. This condition of the epithelial structure, modern pathology has designated as "adenomatous hypertrophy of the uterine mucous membrane." There was no distinct evidence of the basement membrane having given way, nor was there any well-marked invasion of the underlying lymphatic spaces with epithelial cells, as is commonly found in neoplasms having a carcinomatous character. At several points, however, the basement membrane appeared to be on the point of rupturing, with the inevitable result of the development of a truly carcinomatous neoplasm. Such growths as these are hardly to be called adenomatous, for there is no production of new gland tissue; it is more correct to speak of the condition as a polypoid hypertrophy of the lining membrane of the uterus with epithelial degeneration. In all these cases there is a common tendency to steady progression, and ultimately to the formation of a truly carcinomatous neoplasm. The second specimen is very similar to the first, except that the growth is less distinctly polypoid in character, and there is more distinct evidence of its carcinomatous nature. The sections from this specimen showed marked proliferation or an angiomatous condition of the vessels in the muscular tissue of the uterus, immediately underneath the mucous membrane, with increase of connective tissue between these vessels, so that in many places the appearance was not unlike that presented by a round-cell and spindle-cell sarcoma. This condition, which has been erroneously called inflammatory, is unquestionably the result of increased nutrition from the dilatation of the uterine vessels. In this specimen the deeper lymphatics had been invaded by epithelial elements, and the evidence of a carcinomatous development was quite marked. These cases eventually undergo malignant degeneration, except in occasional instances, when the endometrium has been entirely removed with a sharp spoon.

Two Cases of Hysterectomy for Carcinoma, Complicated with Myomata, Double Hydrosalpinx, and Cystic Ovaries.—Dr. Boldt also presented two uteri removed for the above condition.

The first specimen was removed from a patient, fifty-three years of age, who for the past six months had had irregular uterine hemorrhages. Her attending physician, Dr. Henry Ruhl, made a clinical diagnosis of carcinoma, and referred the case to the speaker for operation. This diagnosis was confirmed anatomically before the removal of the uterus. Examination showed not only the presence of myomata, but also of much infiltration around the uterus, and the elasticity of this infiltration showed it to be the result of previous inflammation, and not of malignant disease. The uterus was removed by what Dr. Boldt called, "the ideal hysterectomy," namely, by bringing the stumps down into the vagina and suturing the wound in the vagina so as to entirely shut off the peritoneal cavity. Catgut ligatures were employed exclusively. In this operation the chances of sepsis are very remote and recovery is very rapid. This patient left the hospital on the tenth day. In the second case, a carcinomatous uterus containing a fibroid in its body was removed by the same method, and the patient left the hospital on the eighth day.

The speaker said that the entire uterus should be invariably removed in every instance when the microscopical examination had confirmed the diagnosis of malignant disease, no matter how limited this disease may appear to be, for it has been found that although there may be only a small area of disease about the portico or the cervix, independent nodules may exist in the body of the uterus. The mortality attending this operation is not great; he had lost only three patients out of forty-five cases of vaginal hysterectomy done for cancer, and some operators had reported a still lower mortality. Both the immediate and the remote results, however, must depend a good deal upon the early recognition of the disease and a prompt resort to a radical operation.

Dr. Boldt said that in three of his cases myomata had been associated with carcinoma in women in advanced life, and it was of such comparatively frequent occurrence that he was inclined to believe that the irritation produced by these myomata is prone to give rise to malignant degeneration.

The President and Dr. H. M. Biggs both stated that they had very rarely met with carcinoma and myoma in the same case.

Induction of Chloroform Narcosis during Sleep; Removal of a Shoe-button from the Nose.—Dr. W. P. Northrup said that a child of twenty-two months had been recently brought to his office on account of an offensive nasal discharge which had existed for some time. With an Escherich inhaler, chloroform was successfully administered without awakening the child, and then there was no difficulty in removing a shoe-button from the nose. So far as could be ascertained, it must have been in the nose for at least three months. The speaker emphasized the importance of examining the

nose for a foreign body whenever there has been a persistent and profuse discharge from one side of the nose.

The Society then went into executive session.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE QUESTION OF AMPUTATING FOR DIABETIC GANGRENE—TRAUMATIC VOLVULUS—THE TREATMENT OF THE PERITONEUM IN ABDOMINAL SURGERY—SIR RICHARD OWEN—THE EPIDEMIC OF SCARLET FEVER—DR. RICHARDSON ON INTRA-THORACIC AUSCULTATION—LARGE VULVO-VAGINAL CYST—COMPLETE ERASION OF THE ANKLE-JOINT—THE ANNUAL MEETING OF FELLOWS AND MEMBERS OF THE ROYAL COLLEGE OF SURGEONS.

LONDON, October 29, 1892.

THE last meeting of the Medical and Chirurgical Society was devoted to discussing the question of amputation for diabetic gangrene. The subject was introduced by a paper from Mr. Godlee. He remarked that the term diabetic gangrene was made to include several different conditions now beginning to be recognized. Modern surgical improvements had modified the views with regard to amputation for the disease. The determining causes of diabetic gangrene were the same as in other forms of gangrene, but the author particularly directed attention to three, viz.: Inflammatory conditions, arterial disease, peripheral neuritis. Inflammatory conditions included carbuncles, noma vulvæ, and rapidly spreading ulcers of the legs, as well as extensive sloughing of septic wounds. Atheroma of vessels was probably actually caused by glycosuria, and was certainly predisposed to by it: diabetics who drank alcohol were thus specially liable to degenerative changes in their vessels. Mr. Godlee pointed out that neither gangrene of the foot nor carbuncle occurred before early middle age, and suggested that this was because the arterial and nervous changes had not yet reached a very advanced condition, though it might depend on the well-known differences between the acute diabetes of childhood and youth and the more chronic disease of middle and old age. Peripheral neuritis was now generally recognized as being caused by glycosuria, and as giving rise to many neuralgic and other symptoms, which might be classified as motor, sensory, trophic, and vasomotor. The combination of sensory and trophic symptoms, sometimes called "tabetic," and giving rise to perforating ulcer of the foot, was a fruitful source of gangrene of the leg. The author believed that in most cases of so-called diabetic gangrene, the condition depended chiefly either on arterial disease or on peripheral neuritis. In the former case the disease progressed rapidly, and was accompanied with great pain; in the latter case progress was slow, and pain slight or absent. The former should be treated by amputation at or above the knee, because it had been shown that in these cases the degeneration almost always reached the knee, but that very often it extended no farther; the latter might either be left alone or treated by amputation close to the necrosed part. Mr. Godlee quoted with disapproval some of the views expressed in surgical text-books. He acknowledged, however, that no amount of antiseptic treatment would prevent diabetic coma, and that this might follow even trivial operations.

The President (Sir Andrew Clark) suggested that the dryness of the tissues in diabetes was possibly a cause both of the gangrene and of the neuritis.

Mr. Hutchinson remarked that he had, in a paper read some years ago, advocated amputation above, instead of below, the knee for gangrene. He had often operated on diabetics, and had not found the risks in such cases so much greater, as was generally considered to be the case.

Mr. Golding-Bird mentioned a case of locomotor ataxy with perforating ulcers of the foot, in which he had performed a Syme's amputation. He had chosen that operation as the condition was due to peripheral neuritis and not to vascular changes. The case did well, though another perforating ulcer appeared later just below the inner malleolus; this ulcer, however, was treated with nitric acid, and the patient slowly recovered. Mr. Golding-Bird thought his case confirmed Mr. Godlee's opinion that amputation might be performed in the near neighborhood of gangrenous parts when the gangrene was due to neuritis and not to vascular disease.

Mr. W. G. Spencer narrated the case of a man with diabetes who was passing from seventy to eighty ounces of urine in the twenty-four hours, containing from ten to twelve grains of sugar to the ounce, and who had suppuration of the olecranon fossa. Amputation was advised but refused. Later, the patient became comatose, and at the request of friends amputation through the upper third of the humerus was performed. The stump healed well, and it was noticed after the operation that the quantity of sugar passed had fallen to half a grain in the ounce. The patient was being treated with opium and was on a modified diet which was the same as before operation. Mr. Spencer said that in another case of diabetes he had seen recovery from a severe attack of erysipelas.

Mr. Harrison Cripps remarked that ten years ago the feeling among surgeons was decidedly against amputation for either diabetic or senile gangrene. Then came Mr. Hutchinson's paper recommending high amputation, but even that was no longer necessary now that the principles of antiseptic surgery were thoroughly understood. Mr. Cripps said that he had had to deal with four cases of diabetic gangrene within the last five or six years. In two of these, by keeping the parts properly protected, spontaneous separation occurred satisfactorily. In the other two the gangrene was spreading, and he amputated just above the ankle; perfect healing occurred in both cases. The arteries were atheromatous in one case.

Mr. Marmaduke Shield said he had seen four cases of what might be called spontaneous whitlow in diabetics. Serious results might follow if such cases were treated without strict antiseptic precautions. In several cases of rapid necrosis of the mastoid cells he had found sugar in the urine.

Mr. Treves mentioned two cases of diabetic gangrene in which death rapidly followed amputation. This was four years ago and the deaths might have been due to defective antiseptic dressings. He thought that in some cases of diabetes operations would prove exceedingly dangerous, even with the strictest precautions.

Dr. Drewitt remarked that diabetics were exceedingly liable to be attacked by micro-organisms of all kinds.

Mr. Rivington thought that amputation should be resorted to where gangrene was affecting the life of the patient.

Mr. Pearce Gould said he had recently amputated through the knee-joint for gangrene and suppuration extending as far as the middle of the leg in a diabetic subject. The stump healed well and three days after the operation the sugar had almost disappeared from the urine and since then there had only been a trace.

Dr. George Harley said it had often been noticed that when diabetics were suffering from severe disease or injury the sugar disappeared from the urine only to reappear when convalescence set in.

Sir Andrew Clark said he had known this to occur in several cases of typhoid fever he had seen.

Mr. Treves, in answer to a question from Mr. Rivington, said that in both his cases high amputation had been performed, and both the cases had been in the medical wards for some time previous to operation.

Mr. Godlee then replied. He thought there was not enough known to make any definite statement as to the dryness of the tissues. The antiseptic precautions he

adopted were as follows: the limb was first washed with soap and water, carbolic acid solution, and corrosive sublimate solution (1 to 500), as high as the buttock; hands, instruments, etc. with carbolic acid solution; and, finally, the stump with corrosive sublimate solution (1 to 500). The stump was dressed with Lister's double cyanide dressing. Referring to the question as to whether in his first case the gangrene was due to the diabetes, he said he thought the immediate cause was atheroma of the vessels.

At the Medical Society Mr. G. R. Turner read notes of the case of a boy, aged seven, in whom abdominal pain and fecal vomiting followed a severe blow on the abdomen caused by a fall of twelve feet. The abdomen was opened within twenty-four hours of the accident and a volvulus of the small intestine discovered and unravelled. The patient made an uninterrupted recovery, which Mr. Turner attributed to the fact that the operation was performed before abdominal distention or intestinal adhesion had taken place. Dr. Hawkins and Mr. Staveley related two somewhat similar cases in which twisting of the gut followed abdominal injury and ended fatally. A discussion then took place on the treatment of the peritoneum in abdominal surgery, in which Mr. Meredith, Mr. Alban Doran, Mr. Shield, and Mr. Malcolm took part. Mr. Meredith thought that any unnecessary injury to the peritoneum should be avoided, but, as Mr. Doran remarked, the question turned on what constituted unnecessary injury. Mr. Malcolm thought the peritoneum would stand any amount of handling if it were kept aseptic. Mr. Meredith observed that rough sponging often did good in tuberculosis of the peritoneum by removing the serum and altering the nutrition of the membrane.

On Wednesday evening last a dinner was given to Sir Walter Foster, M.P., M.D., to congratulate him on his appointment as Parliamentary Secretary to the Local Government Board. This is an important post, though the holder of it does not have a seat in the Cabinet. The dinner was largely attended. In proposing Sir Walter Foster's health, Dr. Withers Moore said that while other European nations had recruited their Governments from time to time from the medical profession, hitherto medical men had been conspicuous for their absence from the ranks of the English Government.

Sir Richard Owen continues in about the same condition.

There is, as yet, no diminution in the metropolitan epidemic of scarlet fever.

London, November 5, 1892.

At the last meeting of the Medical Society of London, Dr. Richardson described a new method of physical examination under the name of "Intra-thoracic Auscultation." Some months ago a patient consulted him who was suffering from symptoms which obscurely suggested œsophageal disease. Considerable improvement took place for a time under dietetic and medicinal treatment, but after some months the symptoms recurred in a more severe form. He tried what he had termed the water-gurgle test for the diagnosis of stricture of the œsophagus; viz., he got the patient to attempt to swallow fluid, while he auscultated in the line of the œsophagus in front and behind. This gave negative results, so he employed the œsophageal tube. There was no serious obstruction to the passage of this at any part, but he thought he experienced some slight sense of friction. While examining, an idea which he had had once before, but had not acted on, suddenly occurred to him. Why not auscultate through the exploring tube? He at once sliced off a portion of the free end of the tube obliquely, slipped over this sliced end the terminal part of the double stethoscope, and thus made the exploring tube a continuous stethoscope. The results were most interesting and satisfactory. He could hear soft friction of the tube against the walls of the œsophagus, and was able to satisfy himself that the friction was uniform throughout, and that there was no stricture. On passing the tube into the cavity of the stomach he obtained a quite new sound, viz., a sound like a gentle seething as of air or gas agitated in a thickish fluid, and at times a gurgling sound of gas with another sound probably due to muscular contraction of the stomach itself. As the patient was not inconvenienced he withdrew the tube leisurely, noting the sounds heard meanwhile. The tube had only two openings in it, and these at the extreme end. On withdrawing the tube until the opening on the left side came in contact with that portion of the œsophagus which lay in immediate contact with the heart, he was able to hear both sounds as distinctly as those from a normal heart, though on previous ordinary auscultation he had failed to detect clearly the cardiac sounds owing to the heart's action being very feeble. The cardiac sounds thus heard, however, were duller in character than those heard through the chest-wall. Dr. Richardson suggested that this might be from a want of the resonance probably produced by the pleura stretched over the thoracic cavity. The sounds were, though, both loud and distinct. By moving the tube gently up and down he could get the second sound separately from the first, and *vice versa*. When the opening of the tube was midway so as to compass both sounds, there was not so much difference between the two sounds as was observable in ordinary auscultation. These modifications corresponded precisely with what he had learned many years ago when, with the late Drs. Baly and Sibson, he had seen Dr. Halford demonstrate Brien's theory of the cause of the two sounds. They then listened directly to the sounds from an opening in the chest-wall of an animal under anæsthesia, and found that with such immediate auscultation the sounds were deficient in sharp resonance, and more equable in tone than in ordinary auscultation. The same was the case in intra-thoracic auscultation. He expected, on withdrawing the tube further out of the œsophagus, that it would be possible to hear a loud sibilant or vesicular murmur in respiration, but it was impossible to catch a murmur, even on a deep inspiration, so distinct as the murmur heard from the chest-wall outside. The author suggested that the method he had employed might be found useful in the diagnosis of various conditions. He had found it of service in suspected œsophageal disease; it might also be of use in examining the stomach. Stricture of the œsophagus arising from aneurismal pressure would be instantly diagnosed, as we should hear the pulsation at the stricture. In heart disease it should enable us to distinguish between dilatation and hypertrophy. The diagnosis of clot on the right side might be made clear, and the differential diagnosis of right or left valvular disease ought to be rendered absolute when we had learned sufficient of œsophageal auscultation to discover the new distinctions of sound that would have to be made in some cases, at least, between the tone of the first and the second sounds, and had defined all new lines of distinction between those sounds as heard from within and from without the chest-walls. The clearest definition by this test should be obtainable between pericardial and endocardial friction-sounds and between pericardial and pleural friction.

Dr. Richardson remarked that as his communication was only a preliminary note he would leave untouched the subject of pulmonary auscultation by the intra-thoracic method, and also that of pharyngeal exploration. He then referred briefly to the limitations of the plan and the objections that might be taken to it. The question as to the modes in which the method might be improved by mechanical means opened up a wide field of inquiry. Up to the present he had found nothing better than a good-sized flexible tube with a large lateral aperture at the extreme end. Apertures were essential for the conduction of sound.

Mr. Alban Doran read notes of a case of an unusually large cyst of the vulvo-vaginal or Cowper's gland which

he had treated successfully by excision. Most of these forms of labial cyst, he said, were curable by partial operations, but these proceedings were often unsatisfactory in cases of cyst of Cowper's gland. A sinus was not rarely left behind, and this was as great a nuisance as the cyst itself. Extirpation cured the disease altogether.

At the last meeting of the Clinical Society Mr. Arbuthnot Lane read a paper, illustrated by two cases, in which he described a new operation ("Complete Erasion of the Ankle-joint") by means of which the ankle-joint could be fully exposed and every particle of its synovial membrane removed if necessary. A more or less horizontal incision was made from the anterior margin of the internal malleolus, outward, across the front of the ankle joint, backward immediately below the external malleolus, and inward above the heel to a point over the tendon of the flexor longus hallucis, everything being divided down to the bone. The only structures about the joint not cut through were the internal lateral ligament, the tendons of the tibialis posticus, flexor longus digitorum, and the flexor longus hallucis, the posterior tibial vessels, nerve, and the superjacent connective tissue and skin. On adducting the foot, any portion of the interior of the ankle-joint was fully exposed, and the narrow prolongation of synovial membrane which ran up between the tibia and fibula could be examined and dissected out by cutting through the inferior interosseous and the anterior inferior tibio fibular ligaments. Should the disease have extended to the subastragaloid articulation, it was necessary to divide all the structures covering in this joint superiorly and externally, together with the interosseous ligament connecting those bones, and in extensive disease of the astragalus that bone might be excised with advantage. Whether the cut surfaces of the several tendons were sutured together or not seemed to affect the subsequent utility of the foot but little, if at all. Some care, however, was necessary in putting the foot up in plaster bandages after the operation that the fibula did not drop back a little off its facet on the astragalus.

The customary annual meeting of the Fellows and Members of the Royal College of Surgeons took place at the College of Surgeons on Thursday last. The attendance was not large. The President (Mr. Bryant) gave a short address, in the course of which he pointed out that the report contained a humorous mistake. It stated that the council had had under their consideration two cases of misconduct by "members of the Council," in which they had inflicted the penalty of removal. The statement should read "members of the College." The proceedings somewhat resembled those at former similar gatherings. Mr. Tait moved a resolution to the effect that the report presented was ineffective and incomplete. In moving this, he referred particularly to the absence of any reference to the new university. The resolution was lost, but another resolution was carried calling for a cessation of the hostile attitude of the Council. It was also resolved that it was absolutely essential for the welfare of the College that the Fellows and Members should be consulted before any change was made in the constitution of the College, or before the College was committed to any extraordinary expenditure.

Medical Education of Women in Russia.—The establishment in Russia of a separate school of medicine for women which many people had hoped would soon be an accomplished fact has been postponed probably for an indefinite period. It is stated that the project has been set aside through the influence of the Minister of religion, who views the higher education of women in anything but a favorable light, being persuaded that the study of medicine leads to materialism and nihilism.

Professor Virchow, during his recent visit to Moscow, received the Russian Order of Stanislas First Class and the Grand Cross of the Swedish Order of the North Star.

OUR BERLIN LETTER.

(From our Special Correspondent.)

THE THERAPEUTICS OF CHOLERA ACCORDING TO THE EXPERIENCE GAINED DURING THE HAMBURG EPIDEMIC—DIAGNOSTIC AND PATHOGNOSTIC SYMPTOMS OF CHOLERA—THE IMMUNITY ACTIVITY AGAINST CHOLERA ASIATICA—BILLROTH'S TWENTY-FIFTH PROFESSORSHIP ANNIVERSARY AND JUBILEE—EXTRACTS OF VIRCHOW'S SPEECH WHILE ASSUMING THE DUTIES OF THE RECTORATE OF THE BERLIN UNIVERSITY.

BERLIN, October 22, 1892.

Now that the cholera is almost extinct in Germany we are looking over the different methods of treatment in order that we may accept the most approved. In the beginning all physicians recognized the "antiseptic doctrine," which was given the most thorough trial. To give a *résumé* of all antiseptic treatments would be to say—that all failed! In this category were included salol and benzo-naphthol, creosote and creoline, and also lysol. The same fate befell them all.

All Hamburg physicians unanimously declare calomel to be the sovereign remedy (in doses of $\frac{1}{3}$ to 1 grain). But calomel has its drawbacks, for although stomatitis can easily be prevented, nevertheless several cases of mercurial poisoning could be detected in the kidneys and in the intestines. Along with the calomel we hear great success attained with the ordinary physiological table-salt (Na Cl) solution.

As to whether subcutaneous or intra-venous applications is the better, is still a question of opinion. Among prominent Hamburg physicians, Professor Rumpf and Dr. Schede (surgeon) are in favor of the intra-venous treatment, whereas Dr. Lauenstein (surgeon), Dr. Michael, among others, believe in subcutaneous treatment. Dr. Guttman (Director of Moabit Barracks, in Berlin) discards the intra-venous injections as too bothersome and too complicated for the ordinary practitioner, and recommends the subcutaneous method; inasmuch as it can be applied to different parts of the body, whereas in the intra-venous method the places for application are limited. If the results and statistics show the subcutaneous method equal to the intra venous, then the former (subcutaneous) will be the method of the future, requiring the least technique and time.

Along with infusions and the calomel treatment in the stages of cholera intoxication, "the hot bath" is mentioned for the subnormal body temperature, to be repeated at stated intervals. Combined with the above are hot coffee and tea, wine, champagne, and injections of camphor-oil. The pains in the epigastrium and calves of legs were best relieved by hypodermics of morphia. In the stadium algidum, the above-named remedies were used along with vapor baths, inhalations of nitrate of amyl, to dilate the contracted arteries and increase the circulation. With the exception of camphor injections and morphine, all the above-named remedies proved useless and were discarded. An important point to mention is the opium treatment, which proved to be a fiasco, and was mentioned by all Hamburg physicians to be decidedly injurious. Just as our therapeutic so our diagnostic experience has through numerous observations somewhat increased. We need only refer to an interesting paper of Dr. P. Guttman, read about two weeks ago before the Society of Internal Medicine.

Dr. Guttman says the severe cases are easily made out; the mild cases are hard to diagnosticate. Without a bacteriological examination, impossible in the severe cases, the asphyxia picture is so characteristic that a different affection cannot be mentioned. But this observer mentions an antipyrin poisoning which showed great similarity with cholera, excepting there was hard, solid fecal discharges. Besides, the speaker mentions two cases having nothing but a mild form of diarrhœa and good constitutional condition. In all these the bacteriological examination proved the existence of a mild

but real form of Asiatic cholera. Guttman further tested how long the comma bacilli can live and develop during the course of the disease, and found in a mild case five days, in two cases seven days, two cases eight days, two cases nine days, and one case ten days.

In a case that died on the eighth day the bacilli were easily cultivated from the intestine post-mortem. Along with these therapeutic and diagnostic investigations, the immunity experiments run parallel; although practically useless, they still point the way in which immunity shall render us proof against cholera infection in the future. Two important contributions should be mentioned in this connection: one from Dr. Klemperer, who states that a patient convalescing from cholera is proof against other infections, and besides, his serum can render others immune against infection. It was next found that the serum of non-infected persons contains a certain antitoxic property which could be transferred to guinea-pigs. Klemperer produced a prophylactic vaccination against cholera by taking a three days old culture of comma bacilli, heating them two hours to 70° C., and injecting these in increasing doses subcutaneously. After injecting 3.6 c.c. of such a culture. 0.25 c.c. of serum drawn off through arterial bleeding could render a guinea-pig immune against cholera poison. It is, therefore, proven that the person experimented with is also cholera-proof. The author further found, the same as Koch and his followers, that cholera bacilli injected under the skin will produce mild inflammations with constitutional disturbance.

Klemperer injected a number of young physicians with small quantities of fresh virulent cultures under the hand, and found that the subcutaneous injections produced no mentionable disturbance.

In the subcutaneous connective tissue the bacilli die quickly. The serum of such patients protected a guinea-pig from the deadly dose after an injection of 0.5 to 1 c.c. The author aims at effecting immunity in the same way as nature, without danger. If the latter investigations by Klemperer are not all that we aim at, then a paper recently written by Dr. A. Lazerus, assistant at the Moabit Hospital, and published in the last number of the *Berliner Klinische Wochenschrift*, is a decided advance. The author took the blood serum of convalescents from cholera and injected it into guinea-pigs, to prove that they were immune against cholera. In every case taken for experiment the comma bacillus had been previously demonstrated. It was then shown that the blood-serum of persons who had just had cholera asiatica possessed an enormous preventive power against cholera intoxication. The smallest preventive dose was found to be 0.0001 (one decimilligramme of serum). This dose was found not only to prevent disease, but to prevent death.

On October 15th Professor Billroth celebrated his twenty-fifth professorship anniversary in Vienna. His numerous students and assistants, most of whom have to-day the most prominent surgical chairs in Europe, presented him with a Surgical Jubilee Number, through Czerny, of Heidelberg, the oldest assistant of Billroth.

Professor Albert, of Vienna, was toast-master. He mentioned the difficulties which the Chair of Surgery demanded in 1867, requiring a man well up in practical medicine, in physiological, and pathological anatomy, one who could be a teacher, a writer, and an operator. These qualities were found in Billroth, who has made the University a new surgical school. Billroth, in answering, mentioned his teachers, W. Baum and B. von Langenbeck, whose traditions he had accepted, and which he had always tried to teach his students. The same day that the Billroth festivities were held, Virchow accepted the rectorate of the Berlin University. He had to wait a long time for this honor, which had been given to numerous younger and lesser lights. But since the faculty elevated Virchow to be their sector magnificus, they have honored themselves.

His speech of acceptance was entitled "Teaching and Learning," which is now in print.

In this speech he cites the belief of celebrated pathologists in the methods of teaching and learning of to-day. Both are strongly criticised. He states "that disputed questions between scientific men should not be mentioned in the course of instructions in universities, and should be excluded therefrom."

But we can demand that a young man who has a good thinking capacity can accept without danger the results of astronomical and biological observations. He does not need mathematics in order to study the movements of the heavenly bodies. Physics is now a mathematical science. Chemistry and physiology are more and more based upon calculations. But not only counting but thinking is necessary to understand.

In many schools it is believed that when a logical sentence is cited here and there that justice has been done to logic. How is it possible that a person who does not know the laws of thinking can devote himself to physiology? How can the twisted relationship of mental be equal to a bodily existence.

And now to natural sciences. What satisfactory objects for learning and teaching are found in the natural sciences, botany, geology, minerology? It is a misunderstanding to think that the university teacher lays stress on systematic knowledge gained systematically; it is easy to teach in a university, but the real school depends on the interest infused with the aid of bodily sympathy.

We now have to lament that a great many of our students have no real knowledge of colors. That they cannot differentiate the consistency of the upper layer of objects. We all hope that the words of the great scientist, of which the above is an extract, will be echoed over the world.

New Instruments.

ACCESSORY SINUS IRRIGATION TUBES.

By ROBERT C. MYLES, M.D.,

NEW YORK.

SURGEON, THROAT AND NOSE DEPARTMENT, CHURCH HOSPITAL AND DISPENSARY; ASSISTANT SURGEON, NOSE, THROAT, AND EAR DEPARTMENT, NEW AMSTERDAM EYE AND EAR HOSPITAL; LECTURER ON DISEASES, AND DEMONSTRATOR OF ANATOMY, OF THE NOSE AND THROAT, NEW YORK POLYCLINIC.

I PRESENT an instrument which has served me so well in a practical sense, that I feel justified in advocating its use by the profession, for the purposes hereafter mentioned. It consists of a pure silver tube about four and one-half inches long, with one end bulbous for inserting into a rubber tube. The other or distal end is slightly longer than the body of the tube, and rounded to prevent laceration of mucous membrane when being used. It should be procured in sets of three or four different sizes, ranging from as small a size as can be made from reliable specifications, and which will permit of a flow of fluid little larger than that of an ordinary hypodermic syringe, to one which has a canal about the calibre of a No. 22 platinum wire. The tubes can be bent into almost any shape desired, and can, in the majority of cases, be readily and easily introduced into the antrum of Highmore, by anyone who has an accurate knowledge of the hiatus semilunaris, with very little pain and inconvenience to the patient. When bending the tubes great care should be observed that it be done around some circular surface, such as the finger, as abrupt bending often breaks them. As to the success of introducing them readily, much will depend upon whether the septum is deflected superiorly, the size, position, and firmness of middle turbinated body, and abnormalities of foramens due to degenerative inflammatory processes and adhesions. To succeed, notwithstanding these impediments, cocaine should be carefully applied to the limited areas. The different size tubes should be applied, bending them respectively with cir-

cle curve, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, and 1 inch from the distal end. Then, to find the antrum of Highmore opening, pass the tube forward along the outer wall of the space beneath the middle turbinated body, commencing about the middle third of the same. If not successful, commence beneath the anterior end of the middle turbinated body, fishing, as it were, along the outer wall beneath and external to the bulba ethmoidalis. Following this wider valve-like lip of the hiatus upward and outward, the tube will enter the infundibulum, and this is in the space beneath the attachment of the anterior end of the middle turbinated body. A rubber tube with double layers at each end should go with each tube or set, to be used for attaching the same to a proper syringe. I use them frequently for washing out the frontal sinus by the nostril, but in these cases often have to remove a part of the anterior end of the middle turbinated bone, and sometimes curette the infundibulum. I have found them useful in treating empyema of the ethmoid cells, but usually through an artificial opening in the roof of the space beneath the middle turbinated body. The results have been brilliant in acute cases of catarrhal or grippe origin; in subacute cases relief has been obtained in all, and a cure in the majority of cases. In the chronic cases with pyogenic membrane, granulation, and polyp tissue, in which operations have been refused or deferred, washing out with different medicated fluids has produced marked improvement in the general symptoms, with pleasant temporary relief in the local ones. Notwithstanding some adverse criticism of this procedure, I have demonstrated its practical utility to the class of students at the New York Polyclinic on various occasions, and in as many as four different cases in one evening. The tubes were made by E. B. Meyrowitz, of New York.

25 West Thirty sixth Street.

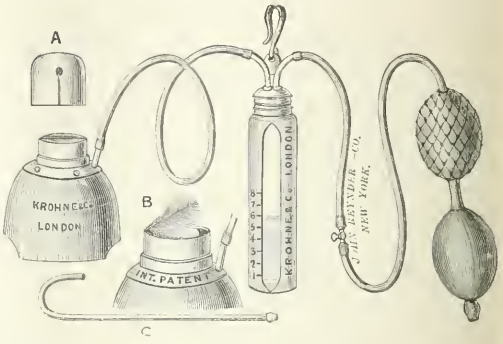
A NEW FEATURE OF ANÆSTHETIC INHALERS.

The following conclusions of the Hyderabad Chloroform Commission are offered for what they may be considered to be worth: 1. That the administration of chloroform is free from risk if the breathing is perfectly regular throughout, and the inhalation is stopped as soon as the patient is fully under its influence. 2. That death from chloroform is always the result of an overdose. 3. That chloroform never causes death by sudden stoppage of the heart. 4. That there is not such a thing as "chloroform syncope;" and that in death from an overdose of chloroform the respiration always fails before the circulation. 5. That the heart is the very last organ to give in under the action of chloroform. 6. That it has demonstrated beyond contravention that, with proper attention to the breathing, chloroform can be administered with safety in any part of the world.

Based on the foregoing data, Messrs. Krohne & Sesemann have devised a respiration indicator, applicable to all varieties of anæsthetic inhalers, whereby the nature, frequency, and character of the respirations of the anæsthetized are shown, so that, owing to the respiration being thus under constant observation, all danger of syncope, coma, or other failure of the heart's action, due to an overdose or a prolonged influence of the drug administered, is removed, as immediately upon indication of an abnormal sign by certain premonitory symptoms affecting the respiration, or by a slowing or entire stoppage of the latter, the apparatus can be withdrawn at once from the patient, and artificial respiration or other recuperative measures resorted to in time to avoid accidents.

The figure shows the improved Junker's inhaler, with the feather indicator, *B*, showing the same. The feather moves by hinge up and down in accordance with the respiratory movements. One complete compression of the bellows will force 5.19 cubic inches of fresh air into the bottle, and escape with an impregnation of a minim of chloroform to the mouth-piece to be inhaled. For operations in the mouth, face, nose, or eyes, a pliable metal tube is supplied, whereby anæsthesia can be maintained through the mouth or nose.

The advantages of this apparatus are: A continually fresh supply of impregnated air, exhaled air not being



breathed over again; the patient does not breathe through the apparatus; twenty to twenty-five compressions per minute will supply the requisite amount of narcotic vapor, and the additional amount of air required to fill the lungs (20 to 30 cubic inches) enters freely at the respiration indicator. The administrator has complete control over the anæsthetic. Economy of anæsthetic fluid.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending November 5, 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	35	7
Scarlet fever	85	10
Cerebro-spinal meningitis	1	2
Measles	60	3
Diphtheria	108	30
Small-pox	5	6
Cholera	0	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0

Medical Students in German Universities.—In the twenty universities of the German empire the medical students for last summer numbered 8,838. These were distributed among the various universities as follows: Berlin, 1,185; Bonn, 325; Breslau, 292; Erlangen, 424; Freiburg, 481; Giessen, 172; Gottingen, 200; Greifswald, 393; Halle, 283; Heidelberg, 278; Jena, 212; Kiel, 335; Konigsberg, 255; Leipzig, 834; Marburg, 266; Munich, 1,443; Rostock, 138; Strassburg, 333; Tübingen, 230; Würzburg, 743.

Carrier-pigeons and Vaccination.—At the last meeting of the Academie de Medicine, Dr. Hervieux read a report by an army surgeon, M. Stroebel, on the transport of vaccine by carrier-pigeons. It appears that one pigeon is capable of conveying in one journey from five to six tubes. The utility of this means of transport in times of war is very obvious, and one can imagine the joy of the representatives of the Army Medical Department at the apparition of a flock of these swift vaccine carriers in a besieged town.—*Annals of Hygiene.*

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Original Articles.

THE RESULTS OF EXPECTANT TREATMENT IN THREE HUNDRED AND TWENTY-THREE CASES OF TYPHOID FEVER.

BY ARNOT SPENCE, M.D.,

NEW YORK.

THE treatment of typhoid fever has always been an interesting subject for discussion. Even now some contend that the disease requires a great deal of treatment, while others assert that the best results have been obtained by the expectant plan.

It can be from no lack of material that the better method remains undecided; for, notwithstanding the many advances in sanitary science, and the constant attention given to this disease by our Municipal Board of Health, typhoid fever still prevails to some extent in New York City.

During the year 1891, 1,342 cases were reported to the Bureau of Contagious Diseases; and it may be safely said, even though the Health Department endeavors to enforce a system of reporting infectious diseases, this number will fall far short of the actual cases existing during that time. Of the cases, 384 were deaths, over 28.6 per cent. of those reported. This disease is met with, it is true, in private as well as hospital practice, but the large number coming under the observation of one man in the hospital makes such records obviously of greater value. Again, the results of hospital treatment are very much better, owing to the almost continuous attention of the physician, and the intelligence as well as the strictness of the experienced nurse. In the cases of private patients, the sympathizing and willing friend is the greatest enemy of the doctor and the nurse, and consequently the ever present obstacle to good results.

St. Francis Hospital of New York City treats, relatively speaking, a large number of cases of typhoid fever each year; and during the last thirteen years there were treated in that hospital 1,012 cases, with only 162 deaths, a mortality of sixteen per cent. The cases forming the subject of this report, 323 in number, include all those admitted to the service of Dr. J. H. Ripley, from October 1, 1884, to January 1, 1892, and most of them came under the observation of the writer. Of the 323 cases, 47 died, a gross mortality of 14.23 per cent. These 47 deaths included 12 moribund cases, or such as were, on admission, so weak that they died within forty-eight hours. If we then omit these moribund cases, as in fairness we can, the death-rate is reduced to 11.25 per cent.

The cases of this report were all real cases of typhoid fever; for the list does not contain any so-called "aborted cases," simple febricular, or any in which typhoid fever was only suspected for a few days. The diagnosis was as certain as we can ever make it, in each and every case. In those cases that died after admission in a moribund state an autopsy was performed to clear up any doubt.

A few words will suffice to explain the treatment employed. It was purely expectant. The drugs used, consisted of a 5- or 10-grain dose of calomel to begin with, if the disease was not too far advanced; whiskey, when stimulation was necessary, and in the case of very great and continued pyrexia (over 105° F.), the cold pack was the usual means employed to reduce it. When possible the water-bed was used in these high temperature cases, but only occasionally was antifebrin or phenacetin given, and then only in single doses. There is no doubt but that the value of antipyretic drugs in all febrile diseases is over-estimated; and where the patient is fortunate enough to survive their use, he is very seldom, if ever, benefited by them. Troublesome diarrhœa was treated with bismuth combined with small doses of opium; or if very obstinate, 5 grain doses of naphthalin were given every two hours until relief was obtained. For intestinal hemorrhage, laudanum in 5- or 10 drop doses was administered at short intervals until the desired effect was secured.

The nursing, which is of such moment in this disease, was most strictly attended to by the sisters in charge of the hospital. The diet was wholly a fluid one, consisting in the most part of milk, together with strained meat broths, and was so maintained until a full week of normal temperature had passed. Even then great care was taken, and the full diet only reached in a gradual manner. The patient, as a matter of course, was kept in a reclining posture and was not allowed to rise or leave the bed under any circumstances.

The cases here reported were mostly drawn from the East Side tenement district, and were therefore, principally of Austrian, German, or Irish nationality or extraction. They came from the lower walks of life, being hard worked, poorly nourished, living under bad hygienic surroundings, and consequently in no physical condition to withstand a tedious and exhausting disease. Again, thrifty and independent as a class—also very superstitious—they use the hospital only as a place of last resource, and cause us to combat in addition to the other drawbacks, the great dangers arising from delayed admission and poor previous care. Only on rare occasions do these people apply for admission before the end of the first week of the disease, and as a rule, not before fourteen days or more of illness. We have, as I have previously mentioned, a number admitted in a moribund condition; this condition, often due to intestinal hemorrhages or intestinal perforation, forces them to apply for admission against their own wishes.

Causes of Death.—The causes producing death in the 47 fatal cases have been classified, and were as follows:

Cause.	Male.	Female.	Totals.
Moribund on admission	7	1	8
Moribund, with intestinal perforation and peritonitis	1	..	1
Moribund, with intestinal hemorrhages	1	..	1
Moribund, with lobar pneumonia	2	..	2
Intestinal hemorrhages	2	1	3
Intestinal hemorrhages and lobar pneumonia	..	1	1
Intestinal perforation	2	..	2
Intestinal perforation and peritonitis	2	..	2
Intestinal hemorrhages, perforation, and peritonitis	1	..	1
Relapse	1	..	1
Typhoid, with pharyngeal diphtheria	..	1	1
Typhoid, with pneumonia	1	1	2
Typhoid poison and exhaustion	15	7	22
Totals	35	12	47

Only 22 of all the deaths were due to the typhoid poison alone, being about one-half, or more exactly, 6.8 per cent. of the total number of cases. Of the other 25

fatal cases, 11 succumbed to the intestinal lesions, which it may be safely assumed cannot be prevented, and are seldom passed over without a fatal issue. Pneumonia caused death in 4 of the cases, 2 of these being moribund when brought to the hospital. One death occurred as a result of the rare complication, pharyngeal diphtheria, and one during a relapse. In another of these fatal cases, to be further explained later on, an intestinal perforation occurred during a relapse, but the case has been included in the intestinal class.

Now, omitting 2 of the 12 moribund cases, these 2 having died of the intestinal lesions, 10 still remain whose deaths may be put down as due to neglect; or speaking mildly, their lives were shortened by being moved while in such a precarious state.

Tabulating the cases as they occurred so as to show the results of each year's work, we have the following:

Year.	Number of cases.	Number of recoveries.	Number of deaths.	Number of moribund cases.	Deaths from intestinal lesions.	Percentage of deaths.	Percentage after deducting moribunds.
From Oct. 1, 1884, to Jan. 1, 1885	33	28	5	1	2	15.1	12.5
During 1885	43	38	5	3	1	11.6	5.0
During 1886	41	38	3	1	..	7.3	5.0
During 1887	42	34	8	1	3	19.0	17.0
During 1888	29	24	5	3	3	17.2	7.6
During 1889	58	46	12	2	..	20.6	17.8
During 1890	40	36	4	..	1	10.0	10.0
During 1891	37	32	5	1	1	13.5	11.1
Totals	323	276	47	12	11		

It will be noticed that the best result was obtained in 1886, when 41 cases were treated and only 3, or 7.3 per cent., died. No intestinal accident happened, and only 1 moribund case was admitted. Had that case remained away, the mortality would have been only five per cent. This same result, 5 per cent., was also reached in 1885 when we leave out the 3 moribund admissions.

In that year, 1885, 43 cases were treated, with 5 deaths, or 11.6 per cent.; 3 of these were admitted moribund, and 1 died of the intestinal lesions.

The highest death-rate occurred in 1889, when out of 58 cases 12, or 20.6 per cent. died; even after omitting the 2 cases that entered in a moribund state, we still had the high rate of 17.8 per cent.

Summing up the yearly results we had in 1889, 20 per cent. mortality; in 1887, 19 per cent.; in 1888, 17 per cent.; during the three months of 1884, 15 per cent.; in 1891, 13 per cent.; in 1885, 11 per cent.; in 1890, 10 per cent.; and in 1886, 7.3 per cent. These figures, it must be understood, show the results obtained, taking all cases into consideration, and are materially reduced when the cases admitted in a collapsed or moribund state are omitted, as is shown in the table.

The low rate of 7.3 per cent., reached in 1886, is that which Dr. Brand obtains, as shown in his reports of cases treated by his cold-bath plan. He says one cannot hope to reach a lower rate than 5 per cent., which mortality (5 per cent.) we were enabled in fact to obtain during two consecutive years. It may be mentioned here, for it tends to augment the value of the results we have obtained, that the subjects Dr. Brand had to treat were of an entirely different class physically from those we receive. They were as a rule robust, vigorous young soldiers, and not the poorly-fed results of competitive bread-winning found in this great city.

The number of deaths from the intestinal lesions it will be noticed, bears no fixed ratio to the number of cases in the several years' groups. The varying results obtained during these years, tends to show very plainly the great changes in its virulency that this disease assumes during different periods. One year all of the cases will be comparatively mild, and the next the poison may show its malignancy in the stupor, delirium, and other nervous manifestations of the so-called typhoid state.

In the following table the cases are divided into groups of one hundred; and in order to include the last, or odd 23 cases, a fourth group, composed of the last one hundred cases treated, has been added:

	Number of recoveries.	Number of deaths.	Number of cases moribund.	Number of deaths from intestinal lesions.	Mortality, omitting cases moribund, per cent.
First 100 cases	89	11	4	3	7.2
Second 100 cases	81	19	5	6	14.7
Third 100 cases	85	15	3	2	12.3
Last 100 cases	87	13	2	2	11.2

In the first 100 cases there were 89 recoveries and 11 deaths, including 4 admitted moribund; 3 cases died of the intestinal lesions. The death-rate, omitting the moribund cases, was 7.2 per cent. The second 100 gives us only 81 recoveries, with 19 deaths, 5 of those being "moribunds;" 6, a large number, died of the intestinal lesions, and the mortality-rate of this group, minus "moribunds," was 14.7 per cent. The third 100 gave 85 recoveries and 15 deaths, including, as usual, moribund cases, 3 in number; 2 deaths were caused by intestinal accidents, one of hemorrhages and one of perforation; and the death-rate, leaving out the cases admitted in collapse, was 12.3 per cent. The fourth series, which is composed of the last 100 cases, and which includes the odd 23, gave us 87 recoveries, while 13 cases were fatal, including 2 admitted moribund. Two of the patients succumbed to the intestinal lesions and the percentage obtained, after omitting the "moribunds," was 11.2. Even in groups of 100 cases the mortality-rates are variable, though not as markedly so as in the smaller sets. On arranging our cases however, in series of 200, we find the death-rate much more stable, it being between 14 and 15 per cent. These figures are reduced to 10 per cent. and 11 per cent. respectively when we take into consideration the cases that were admitted in collapse, and the mortality of the whole 323 cases to 11.25 per cent.

Age.—The patients ranged in age from eight to seventy-four years; of the former there were three cases, and at the latter age but one a female, who by the way, was discharged cured. The next oldest was fifty-seven years of age. The number of cases at the various ages were as follows:

Age.	Cases	Deaths.	Mortality.
			Per cent.
Under 10 years	4	1	25.0
From 10 to 15 years	8	1	12.5
From 15 to 20 years	67	5	7.4
From 20 to 25 years	104	13	12.5
From 25 to 30 years	84	13	15.4
From 30 to 35 years	27	3	11.1
From 35 to 40 years	17	7	41.1
From 40 to 45 years	6	3	50.0
From 45 to 50 years	3	1	33.3
At 50 years and over	3	0	0.0

This table shows that 255, or more than two-thirds of all the patients, were between fifteen and thirty years of age, and that 104, or nearly one-third, ranged from twenty to twenty-five years in age. The greatest mortality, 50 per cent., occurred in those patients that were between the ages of forty and forty-five; and, next to the last, in which there were no deaths, the smallest, 7.4 per cent., occurred in those between fifteen and twenty years. The groups however, are not sufficiently large, except in three instances, to make the ratings of much value.

The death happening in those under ten years, was that of a boy eight years of age, who was admitted on the fourteenth day of his sickness. The fever ran a favorable course until the twenty-sixth day, when a relapse occurred, and he died on the thirty-ninth day of the disease.

An autopsy revealed perforation of the gut at the site of a sloughing ulcer, also some recently healed Peyer's patches. The fatal case in the second set was that of a boy aged eleven, who, having been brought into the hospital in a moribund state with well-marked peritonitis, died within thirty-six hours. The autopsy showed a general suppurative peritonitis and perforation of a typhoid ulcer.

These deaths have been particularly mentioned, for the reason that the mortalities of twenty-five and twelve per cent., respectively, are rather high, considering the ages of the cases. It is generally believed that typhoid fever is, in children, rather more favorable as to prognosis than in adults.

Sex.—When these 323 cases are divided as to sex, we find that there were 251 males and 72 females. Among the males 35, or 13.9 per cent., died, and of the females 12, or 16.6 per cent., were fatal. Of the 12 moribund cases only one was of the gentler sex, and only two females died of the accidents liable to follow the intestinal lesions.

Season.—The greatest number of admissions of typhoid fever patients occurred during the autumn months, and the least number in the spring.

Spring	15	Autumn	203
Summer	87	Winter	18

Of the 87 cases admitted in the summer time, 14 died, or 16 per cent.; and of the 203 who entered in the fall 28, or 13.7 per cent., proved fatal. The marked difference in the number of the cases comprising these two seasons' admissions lessens the value of the relative mortality-rates. It is contended by some, that the death-rate is higher during the summer than during the cooler months, but a great many factors must be taken into consideration before agreeing to that opinion.

Complications.—In only about two per cent. of the cases did relapses or reinfection occur, and this very favorable showing is undoubtedly due to the strictness of the dietetic treatment and the nursing.

Pneumonia occurred as a complication in 15 of the cases, 10 being croupous and 5 catarrhal in form. Of the 5 fatal cases, all of which were of the croupous variety, two were admitted moribund and one had also intestinal hemorrhages. It will be noticed that recovery took place in all of the cases complicated by the catarrhal form of this disease.

Hemorrhages from the bowels complicated ten of the cases, and six of these ended fatally. In one of these fatal cases the hemorrhages were followed by a perforation of the gut, and later by suppurative peritonitis; in another, as has been mentioned, croupous pneumonia was an additional complication. Of the four cases ending in recovery one had profuse hemorrhages on four different occasions, and it was most certainly believed that he had a perforation of the gut also.

By no physical signs, or subjective or objective symptoms, can the physician diagnose the gravity of the intestinal lesions before the gut has suffered a perforation. Frequently at the autopsies have the ulcerations been found to have eaten clear through to the peritoneal covering of the intestines.

A number of our cases were also complicated by other diseases which were fortunately not fatal. They were as follows:

	Cases.
Fracture of the lower jaw	1
Ischio-rectal abscess	1
Phlebitis	2
Phthisis, incipient	3
Phthisis with Pott's disease	1
Pleurisy with effusion	2
Purulent otitis	4
Suppuration of a thyroid cyst	1
Varicose ulcer (large) of leg	1

That a very low mortality-rate can be reached in small, or, considering the tendency of this disease to a favorable termination, in relatively small series of cases, is particularly shown in the results achieved during 1885 and 1886, when 80 cases were treated, with only 5 per cent. of deaths. A number of such series might easily be collected, and when combined would, of course, result in a surprisingly low rate. Thus it is plain that a just and average mortality can only be obtained from the treatment of a large number of consecutive cases; those cases should be seen in one institution and be under the care of but one man, or a very few men, to insure a reliable report.

In conclusion we can say that of our cases nearly four per cent. died as the result of admission in a moribund state; that over three per cent. died of the accidents incidental to the intestinal lesions, as hemorrhages, perforation, and peritonitis; that 1.5 per cent. died of complicating pneumonia; that 6.8 per cent. died of the typhoid poison itself and its resulting exhaustion. That the death-rate was higher among the females than the males, and that the lowest mortality was in those cases of an age between fifteen and twenty years.

It is not likely that any treatment can be devised which will prevent absolutely such occurrences as intestinal hemorrhages and intestinal perforations, and therefore we shall always have those to contend against. A treatment which may possibly antidote the specific poison of typhoid fever without lowering the vitality of the patient will be, in accordance with our present theory, the one to reduce its mortality.

The writer wishes to express his grateful thanks to Dr. J. H. Ripley for the permission given to report these cases, and for his helpful suggestions and kind advice.

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SOME OBSERVATIONS ON THE ETIOLOGY AND TREATMENT OF DIPHTHERIA.

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Within a short period the profession has been put in possession of a relatively important advance in the etiology and treatment of this dreaded disease; and by the combined labors of the bacteriologists and pathologists and the clinicians, in line with the long-continued researches on anthrax, tubercle, the pus organisms, and the chain cocci, the diplococcus of pneumonia, tetanus, and some others not so well distinguished by corroborative evidence, it is hoped that we are now coming to a sound and fruitful appreciation of the etiology, and an increasingly successful management, of the "diphtheritic process." As with anthrax, it has required many years and many investigators to arrive at the present stage of what may be fairly called brilliant and successful studies regarding the disease diphtheria, its separation from the common membranous sore throats, and some accurate knowledge of its virulent and destructive agency on nervous tissues. Starting from Klebs's discovery of the bacillus in 1873, and Löffler's success in first isolating and producing pure cultures of it, one by one the clouds of empiricism have given way to the successive steps, until now it seems to be confirmed beyond reasonable doubt that this organism is the sole originating cause of diphtheria, that it can be found in the superficial layers of the membrane in most cases of the disease, and that it elaborates, in its growth, an infective principle which, being absorbed by the circulation, sets free a ferment having the power of decomposing or digesting certain proteids in the body, forming albumoses and an organic acid. These digested products are the toxic agents, cause fever, depression, and the characteristic degenerations of the component nerve-structures, as, for instance, the gradual disappearance of the white substance of Schwann, and rupture of the axis cylinder in peripheral motor-nerves, and various degenerations of sensory and sympathetic nervous tissues—described at length by Martin, Dejerine, and others.

The diphtheria bacillus is not found, thus far, in the

general circulation or in the body at large, and it is not reasonable to expect to find it so distributed, from the nature of its toxic products; but it is found in the early hours of the disease in the top layers of the membrane, as described below. The virulent chemical agent or ferment, first separated from pure cultures by Roux and Yersin (who also first produced the characteristic paralysis in animals by inoculations with it), and confirmed by Brieger and Fränkel, was found capable of killing, in the dose of 0.0004 gramme, two rabbits weighing three kilogrammes each. It is considered to be a ferment from its power of prolonged effect on the body, lasting over several days, and from the fact that heating attenuates the poison, and boiling destroys it. The physiological action of the albumoses (there are three made out by Martin) obtained from artificial cultivations of the bacillus in one to two per cent. solutions of alkali albumin in beef-broth, without the addition of peptone, when injected into animals, is similar in its effects to the well-known phenomena observed in man with typical diphtheria, such as fever, depression, loss of weight, diarrhœa, dyspnœa, and a progressive paralysis of the muscles dependent on a parenchymatous degeneration of the peripheral and other nervous structures. Owing to the peripheral degeneration of the phrenic nerve it is uncertain how far the respiratory attacks are dependent on this degeneration, and how much they are due to an effect on the central nervous system.

The diphtheria products are special nerve-poisons, and they may cause degenerative changes of nerves even during short periods of the acute disease; they have been likened in their effects to snake venom, and still more so to the poisonous proteids existing in jequirity seeds. The organic acid, the other substance found as one of the diphtheria products, has an insignificant but slightly similar action on the animals experimented with, and they recovered; yet when afterward killed, they had also some degree of fatty degeneration of the heart-muscle, and degenerations of the phrenic nerve.

The anthrax bacillus produces toxic albumoses and an organic *base*, and that organism is found, in the first few days of infection, mainly in the spleen and liver; then, following the conquest of the blood- and tissue-cells—the intoxication—it is found swarming in the body at large, the final fatal product being an alkaloid. In diphtheria these albumoses are found to be of far more virulent capabilities, the organism, as a rule, early disappearing from the membrane and its localized seats, and it has not been found distributed in the body. The peculiarities and properties of the secondary infective agent of the latter bacillus suggests a diastatic ferment, and the albumoses are the actively fatal agents. These "albumoses of diphtheria cannot be distinguished from those of anthrax or of peptic digestion, by chemical means. Their physiological effect—a test far more delicate than any chemical reaction—is the only method by which their specificity is made evident." Not all albumoses produce fever, that from tetanus, for instance, producing depression of temperature, and that from diphtheria, in medium dose, has the same effect. The proteids, always existing in relatively large amounts in the spleen, are the main source of the digested products, the albumoses, resulting from the action of the ferment elaborated by the diphtheria bacillus in the membrane. The fibrin of this membrane is the earliest partly digested product of the bacillus, and this structure may in turn serve as culture media for other micro-organisms, which in turn overcome and finally destroy the original Löffler bacillus. The fundamental facts regarding the chemico-physiological action of anthrax and diphtheria products so far worked out, have been and are suggestive of definite lines of procedure regarding the micro-organism of rabies; and with tetanus are now producing practical results. It is also justifiable to place the toxic principles of the tetanus and rabic organisms—although the latter is not yet known—in the same category with diphtheria, their effects and the phenomena in the body being presumptive of their being virulent nerve-poisons, the primary infective agents being in small amount which, when absorbed, act with prolonged decomposing effect on certain proteids, with power of selecting the components of central nerve-structures.

Bearing these facts in mind, it becomes apparent with what importance the diagnosis should be made at as early a period as is possible, when one has to do with membranous disease of the air-passages and throat, and the character of the means and methods to be applied in the treatment. It is needless to say that not all membranous throats are diphtheritic, for they are not; yet it is common to hear of considerable diphtheria, diphtheroid, and contagious throat disease, and there is very much uncertainty in the minds of medical men how otherwise to name many of these complex cases under the circumstances; the treatment being much the same, and the common welfare bearing on the matter in a serious and complicated way. As a matter of fact, probably not over twenty per cent. of the cases reported are in reality diphtheria, and it only requires some courageous patient, whose business and household have been in part ruined, to bring suit against some city authorities for the destruction they have wrought him, because he has gone through an ulcerated throat with membrane, and has been reported and labelled as being an object to be shunned for weeks by his neighbors. If such patient brought his suit for damages against a health authority and city, and could prove that no accurate diagnosis was obtained, that he promptly recovered with no ill-effects following, it is quite likely that a body of well informed practitioners, in any of our large cities, would testify that he probably did not have diphtheria. In such a case he, in equity, should be reimbursed by the same powers that came down upon him, labelled him as diphtheria, and wrought upon him and his home the wonderful performance of a sulphur fumigation and the usual "taboo" in such cases. Now, it would seem that in justice, before proceeding thus far, it would be the duty of the physician in attendance, or the health authority, to procure this diagnosis if it is possible to do so, and that it is not nearly so difficult as it would appear, is mainly the object of this communication.

Eminent and widely known practitioners have recently stated that there are cases of diphtheria in which no means known to them have had the slightest curative effect. This is undoubtedly the fact, but it is explicable when it is known that flecks of membrane exist in concealed localities, or that cannot be reached by ordinary means; or, before being reached and treated, have already been the seat of well-developed colonies of the bacillus with consequent results. And, finally, individual impressibility to the toxic products varies enormously. The organism grows rapidly, colonies becoming visible, in blood-serum and glycerined agar culture media, in from twelve to thirty-six hours. The method of procuring small portions of the membrane and transferring them to the culture-tubes or dishes, and keeping them in incubators at about blood temperature, is obvious. If enough plants are made and the proper care is observed, the diagnosis can be made by the following day, in all probability. Long forceps and scissors duly sterilized are used to procure bits of membranes from the parts that can be reached, or a detached portion may be treated in some solution, and an underlying section gotten for planting. Baginsky,[1] after securing a bit of membrane, dips it for a moment or two in a two per cent. boric acid solution, believing that thus the common mouth-organisms are retarded or destroyed, and then places it in blood-serum tubes. He reports finding the Löffler bacillus in 118 instances out of 154 cases, and as early as ten hours after getting the membrane for culture. Of these, 39 were paralyzed in more or less degree, 17 went to septic infection, 44 were tracheotomized, and 29 were without any complications. In some cases the bacillus was not found, yet they had all the symptoms of the disease; four

[1] Deutsche Med. Woch., No. 6, 1892.

proved fatal, one was already paralyzed on its reception to hospital, a second was complicated with measles and died of pneumonia, and two of septic involvement, double empyemia, etc. Some of the cases showed, instead of the Löffler bacillus, the chain cocci, or streptococci, and ran a malignant course mainly, however, of septic character, and not in the line of true diphtheria. Baginsky in his paper speaks of two forms of membranous throat disease, one the true diphtheritic process, the other a relatively less serious disease and not transmissible, and hence the necessity of culture-tests and scientific diagnosis. He notes two cases of rhinitis fibrinosa, or "chronic diphtheria," which recovered, the bacillus obtained from the membrane, cultivated and injected into rabbits, killing them with all the symptoms of the disease, including the paralysis. The membranous throats of scarlatina gave only streptococci, and he thinks that further studies of such cases might throw light on the scarlatinal etiology. Henoch recommends anti-diphtheritic treatment for all membranous disease of the throat, without waiting for the culture diagnosis. He believes scarlatinal diphtheria, or the membranous throat seen in scarlatina, is of the true variety, even though cocci are alone found, saying that after healing of the mucous membrane the diphtheria bacillus may still survive. Some modern observers are of the opinion that this membrane formation, wherever occurring, is due to the Löffler bacillus, and nearly all concur in the opinion that true croup is diphtheria of the larynx. Henoch does not believe true croup to be diphtheria, unless the latter disease prevails endemically.

Carl Guttman believes that in cases wherein the diphtheria bacillus is not found at the time of the examination, it still existed at an earlier period, and was dominated and destroyed by later common mouth-organisms. He quotes three cases of laryngeal croup without pharyngeal diphtheria, in which the true diphtheria bacillus was found.[1] Ritter reports 29 cases of diphtheria, finding the bacillus in all and their cultivation. The detached membrane was first dipped and gently rubbed off in a weak thymol solution, then the upper layer scraped away, and small sections of the next or middle layer used to inoculate the culture media. Eberth, in 52 cases, found the bacillus in 37, negative in 15. He believes that with greater care the bacillus could have been found in all the cases. In 31 cases of angina follicularis and severe throat inflammation, he found no diphtheria organisms, only the mouth-organisms and cocci, in one case the pseudo-bacillus of diphtheria. Eberth remarks that it is always a most disturbing element to find the streptococci or the chain cocci in these examinations, because in such there is imminent danger of septic infection and inflammatory lesions in joints, pleuræ, and heart valves. Virchow draws the parallel between diphtheria and tuberculosis, both diseases existing in the form of their specific micro-organisms and as in the inflammatory processes; and that it is of importance to distinguish between the clinical and anatomical pictures.

It is recognized that medication must be directed to the removal of the fibrin-imbedded epithelium of the mucous membrane, or false membrane, and to cleanse the parts involved as well as all the contiguous passages; and then to directly apply the agents selected to remove and destroy the pathogenetic organisms—by sprays, swabbings, powderings, submucous injections, and similar manipulations by competent hands. For the first purpose, weak chlorine-water, lime-water, and weak solutions of boric acid, corrosive sublimate, creolin, and carbolic acid seem to be most used; and for the second, stronger solutions of the same, the liq. ferri sesqui-chlor. and powders composed of sulphur and quinine, bismuth, freshly powdered cubebs, and some few others not so well known.

Dr. Jaques,[2] of Marseilles, reports the methods used by him during the past three years with satisfactory results. He isolates his patients in smooth-walled and scantily furnished rooms, and institutes an accurate and precise plan of management and treatment from the very first. For instance, a child of seven or eight years of age. The first gargle is composed of one part liq. ferri sesquichlor. and two parts of glycerine; a tablespoonful of this in one-fourth part of a glass of boiled water. The second application is composed of carbolic acid in crystals, 2 grammes; glycerine, 50 grammes; distilled water, 150 grammes. These are used on alternate hours, each being preceded by a thorough douching or spraying by means of a three per cent. boric acid solution. No internal medication. For drink, diluted cognac or rum, and milk diet. The same method of treatment has practically, for some time, been in use in the Children's Hospital in Berne, with a reduction in mortality of from twenty to thirty five per cent. over former methods.

In the Children's Hospital of Munich, Professor Seitz is in the habit of using, by means of extemporized hoods over the head of the patient, large volumes of steam and vapor from a solution of eucalyptol, in the proportion of from two to five per cent. Previously—in some cases—the membranes are digested by using pancreatinine or papayotine and brought away, the latter acting with remarkable rapidity. These substances are applied in the form of pastes with camel's hair pencils. He used stimulants, fluid nourishment, and beyond mild febrifuges no internal medication. Lysol, creolin, and salol are much used in the Munich hospitals in throat affections with membrane, and in various solutions and methods—sprays, gargles, etc.

Strubling,[1] after cleansing and gargling with weak solutions of carbolic acid, sublimate (1 to 2,000), lime-water, etc., makes direct applications with iodine and phenyl solutions, and weak solutions of the liquor ferri sesquichloride. Internally he uses hydrarg. cyanur. The treatment originated by Professor Burchardt, of Vienna, is by means of frequent garglings and cleansings of the involved parts, followed by the use of a powder composed of equal parts of the flowers of sulphur and quinine, applied by a specially designed pulverizateur. No food or drink follows these applications under one and one-half hours. This method is reported as conducing to rapid exfoliation of membrane and necrotic parts, and limits the spread of the local disease. Siebelt, of Leipzig, gives 46 cases, of which number 10 were fatal; 44 were children of from six months to thirteen years of age, and 2 were adults. He uses creolin in the form of spray, in from one-half per cent. to four per cent. solutions. Leaving out 4 cases which came late under treatment—dying within twenty-four hours—the mortality was fourteen per cent. Of the total cases eighty-six per cent. were free of complications. He thinks creolin is better borne than corrosive sublimate and carbolic acid, and that it is a better remedy for use in diphtheria.

On the Continent there is not much to be found in reference to, or in favor of, the use of the peroxide of hydrogen in diphtheria, but that it has value in the common throat ulceration is hardly doubted. It is not the present purpose to enumerate all the methods of treatment in use, but only such as are based upon given results of prominent value reported recently. In a somewhat limited experience the writer has found it satisfactory, after cleansing the locally involved parts with weak antiseptic solutions, to use directly on them a one-quarter to one per cent. solution of the mercuric chloride hourly, and this whether the appearance at first is indicative of typical diphtheria, or of irregular ulceration with flakes and smears. The application must be done well and thoroughly, and a pinch of cotton wool in forceps makes a good swabbing appliance, and is at once destroyed. This method, in the great majority of instances, with or without painful glandular involvement, will clean up these doubtful throats remarkably soon. A persisting reforming membrane will be gradually overcome, and in such

[1] Roux and Yersin, d'Espine and Marignac, and Tangl.
[2] Revue Mensuelle des Maladies de l'Enfance, March, 1892.

[1] Deutsche Med. Woch., September, 1891.

cases lime-water, and steam from a lysol or creolin solution (two to four per cent.), is an additional weapon of importance. The ice-pack to the throat is also soothing and beneficial. If, in the first hours of suspected or even undoubted diphtheria, its local seat is vigorously attacked, internal medication will not be of much moment, beyond some stimulation. The best of cognac much diluted in pure water iced, and full doses of the sesqui-chloride of iron in distilled water, at two-hour intervals, are obviously of great use; and the latter is a remedy more universally used and believed in than any other. The digestive plans of getting rid of the membrane are much depended upon by some, yet they do not meet with general acceptance, because of the amount of local pain sometimes produced, and the manipulation demanded, the results in the end being questionable.

The ice treatment[1] consists in applying ice externally and internally, sufficiently long to abort all bacterial growth by reason of the reduced temperature produced. The ice-pack is applied externally to the neck, pieces of ice are left to dissolve constantly in the mouth, and the tongue, throat, and contiguous parts are sprayed with ice-water. This is easily done, even in the case of very young children. It should be followed for from twenty-four to thirty six hours without intermission, after which a pause may ensue of an hour or two. It "relieves pain and swelling of the glands, reduces fever, procures comfort, and limits the growth of the bacillus," so conducing to rapid cure. Internally this observer also used chloride of potash, the tincture of the sesqui-chloride of iron, sod. salicylate; and for diarrhœa, opiates. He reports an improved mortality, and the patients as being always grateful and treatment well borne.

The result of the immunizing of animals for periods of time, accomplished in the experiments of Behring, Kitasato, and Fränkel, by means of sterilized cultures of the bacillus, the toxic principle being gotten rid of by heating above 55° C.; and the trichloride of iodine (1 to 500), added to pure cultures, used after inoculation with the toxic products; or by the use of cell-free fluids or blood-serum of inoculated animals, are as yet too inconstant to be of any practical use. Löffler's[2] experiments with cultures of the organism with various inhibiting and destructive agents, yielded results that have been for some time in practical use. Kali chloricum was not inhibitory in five per cent. solution. Prompt destructive effects followed with the use of sublimate, mercuric cyanat., chloroform-water, and carbolic acid. In the Griefswald clinic patients are sprayed, pencilled, etc., with sublimate in 1 to 1,000; carbolic acid, three per cent. in alcohol thirty per cent.; turpentine with carbolic acid, two per cent., in equal parts every one or two hours. Prophylaxis for the well includes the use of the same agents, in weaker solution, and by inhalation as well.

There do occur severe, rare cases in private practice, the spreading, waxy, membranous throats, with fever, depression to hebetude, diarrhœa, and greatly swollen and painful glands with difficult breathing, in which one may well ask what shall be done! What steps of notification to the health authorities, proper isolation and treatment, become practicable among the crowded poor, or even with the better circumstanced middle classes? Prompt action is demanded by public sentiment, reasonable or unreasonable, and by the exigencies of the patient's condition. With it all medical minds very often may and do differ, and health boards are, unhappily more or less with us, still in politics, while the means for securing correct and rapid bacteriological or culture diagnosis are not yet common in this country. Such questions constantly and unexpectedly come up, and must be met by resolute and decided action based upon modern methods mainly. From the very first, isolation in clean, unencumbered, and well ventilated rooms must be procured, and the obvious disinfectant precautions put in force.

[1] Dr. Mayer: Therap. Monatschr., November, 1890.
[2] Deutsche Med. Woch., No. 10, 1891.

The treatment may vary according to preference based on individual experience, but regard must be had to the cardinal points of: Early correct diagnosis by a competent pathologist; cleansing by weak solutions, followed by more direct and concentrated agents in the hands of skilled nurses or the medical adviser himself, with the view of limiting the growth of the organism; and the patient must be stimulated. In the very young sprays can be introduced through the nostrils to the back of the throat, hoods can be improvised, and steam vapors of well-known agents used constantly; and the strength kept up by weak brandy, milk and lime-water. The ice-pack relieves painful glands, and lumps of ice in the mouth are grateful. The sesqui-chlor. of iron can be used as spray, and by this means much absorbed, if a preference is given to this valuable remedy. The use of membrane-digesting agents requires more care; and papayotine must be carefully handled, as it magically dissolves and destroys membrane, and may attack tissues not contemplated. In the newer substances of proved anti-bacterial value, such as creolin, lysol, aristol, and several others, not to the neglect of the sublimate and carbolic acid, there is abundant choice for remedies.

When it is apparently impossible to apply with any thoroughness this plan of management and treatment, as, for instance, among the crowded homes of the poor, their best interests, and that of the public as well, demand removal to an infectious pavilion suitably provided for such cases, and which should exist as annexes to all competent hospitals wherever located. The wealthy can provide equally safe and efficient means in their homes.

That the measures now current among the properly informed members of the profession, imperfectly touched upon in this paper, and which are based upon the now recognized etiology and pathology of the diphtheritic process, do favor rapid cure, and that they have robbed the disease in recent years of half its terrors, seems now to be substantiated by the records of large numbers of cases treated, and is felt to be the fact by many practitioners of the present day. With the knowledge to be gained by the culture examination, the treatment and prognosis become clearer. The streptococci when found contain an element of danger from septic invasion of internal organs, but with limited power of transmission; while the true diphtheria bacillus and infective agent is lethal in its direct effects, far-reaching in its consequences, and fraught with danger to life and an easy transmissibility from the sick to the well.

In conclusion, the evolution of the micro-organism of diphtheria itself is a much more difficult question. Whether, under conditions of the well-known insanitary human environment almost invariably associated with the first cases of diphtheria met with in a house or section of a city, an ordinary saprophyte enters upon another phase of growth and tissue chemistry, whereby its products become to us such characteristic lethal elements, with formation of ferments—commonly seen in vegetable organisms, and existing normally in some plants higher in the scale, especially in their seeds—the Löffler bacillus as such is evolved with all its virulent capabilities, is extremely probable, but is not proved. Or whether this organism exists always with the same potentialities, needing only the depraved conditions of health to be found in insanitary habitations, and chiefly dependent upon foul ground-water—from surface soakage, in contra-distinction to the high level of subsoil water common to some sections of flat lands—to produce the disease, is an equally plausible theory. In many minds the first proposition seems most probable, and many otherwise unaccountable circumstances in connection with the origin of cases of the disease *de novo*, would seem to be in accord with it. This chain of reasoning would equally apply with some other diseases due to microphytic causes, as the origin of typhus, typhoid, cholera asiatica, and the class as yet denominated filth diseases. It is accepted that the diphtheria bacillus exists commonly under conditions of moist

foulness, under ordinary temperatures, in sewer-pipes, drains, and damp, unconcreted cellars, in and about human habitations. That unusual physical conditions, such as great variations in barometric pressures of the atmosphere over such foul and moist soils, cause excessive "ground respiration," with an exceptional freeing of this among other micro-organisms of the saprophytic class, thus polluting the air to an unusual degree, is also quite evident. These problems are not so far advanced in their satisfactory solution as is the recent work on the points of the disease more fully dwelt upon above.

THE PREVALENCE OF CORNEAL ASTIGMATISM IN EYES WITH NORMAL ACUITY OF VISION, AND WITHOUT ASTHENOPIA.

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AFTER the invention of the ophthalmometer, by Helmholtz, Donders was the first to use it for the determination of the prevalence of corneal astigmatism in ametropic and emmetropic subjects. The results of these investigations were most important. They overthrew the prevailing opinions that myopia was due in large measure to increased curvature, and presbyopia to lessened curvature of the cornea. There were also other conclusions indicated, which have been since fully settled, and on lines laid down by Donders. These will be discussed in a later part of this paper.[1] The ophthalmometer of Helmholtz involved so much time and trouble in determining the radius of curvature of the cornea, that it was little employed, except at Utrecht by Donders and his students. After the invention, by Javal and Schiotz, of a modification of that of Helmholtz, which in practical use is a marvel of simplicity, measurements of the cornea were numerously made by Javal,[2] Nordensen,[3] Schiotz,[4] Burnett,[4] and others. These examinations were upon school children and persons coming to an oculist for advice. So far as I know, there have been no results published of the examinations of a selected class, such as is enumerated in the title to this paper. Yet this examination of what passes for the normal type, and which, on superficial examination at least, shows no departure in acuity of vision, and in general functions from a normal condition, is of importance. Without such examinations we have no sufficient data upon which to form conclusions as to the full significance of the anatomical conditions. It is only by them that we can separate the ideal from the real, the normal from that which is abnormal. I have already published investigations of this kind to determine what is the prevalence of emmetropia [5] and what of equilibrium of the external ocular muscles [6] in presumably normal eyes, that is, eyes with normal acuity of vision and without asthenopia.

Believing that it is important to determine the degree of astigmatism in the cornea which does necessarily involve asthenopia, I offer a contribution to this subject, in the following table. It was prepared for me by Dr. A. Britton Deynard, an assistant surgeon of the Manhattan Eye and Ear Hospital, and an instructor in the Post-Graduate Medical School. It has required more than twelve months to secure a hundred subjects who should fulfil the indications for an examination. The subjects were obtained chiefly from the patients in the aural clinics and from the physicians attending the practice of the hospital, and from the attending and home staff. It is hardly necessary to state that every pains has been taken to make the examinations accurate. They have often been repeated and subjected to an examination from another observer than Dr. Deynard when he felt any doubt as to the fitness of the subject in the fulfilment of the conditions for examination, or as to the readings of the ophthalmometer. Nearly every one of the subjects had $\frac{20}{20}$ vision. Many had $\frac{20}{15}$. The examinations were made in a room uniformly lighted. I shall not enter into the question as to whether $\frac{20}{20}$ constitutes an absolutely perfect or ideal standard of vision, except to say that I have no idea that it does. Snellen, the author of the system, never claimed this. It is, however, a standard sufficiently exact for ordinary reference and work. From my point of view, when $\frac{20}{15}$ or $\frac{20}{10}$, or even $\frac{20}{20}-$, is easily and fluently obtained it is sufficient vision to be pronounced normal. I do not make investigations of asthenopia from the standpoint of the patient having ideal vision, or that which the most far-seeing eye can secure, but rather on the ability to use the eyes without fatigue for a proper period of time, this being coincident with $\frac{20}{20}$, or at least $\frac{20}{20}-$.

The general table is first presented. Afterward it is classified in sub-tables, and an analysis made of its results.

A Table Showing the Corneal Astigmatism of 100 *Persons, with Normal Vision* $\frac{20}{20}$ *or* $\frac{20}{20}-$, *and without Asthenopia*

Number.	Age.	Sex.	Occupation.	Vision.	Refraction by Ophthalmoscope.	Javal.
1	25	M.	Physician.	$\frac{20}{15}$	2	25 90°
				$\frac{20}{15}$	2	25 90°
2	37	F.	Nurse.	$\frac{20}{20}$ $\frac{3A}{20}$ w. 1.90°	2	2 90°
				$\frac{20}{20}$ $\frac{3C}{20}$ w. 1.90°	2	2 90°
3	31	M.	Physician.	$\frac{20}{15}$	1	25 90°
				$\frac{20}{15}$	1	25 90°
4	13	M.	Student.	$\frac{20}{20}-$	1	50 90°
				$\frac{20}{20}-$	1	50 90°
5	12	F.	Student.	$\frac{20}{20}-$	1	1 90°
				$\frac{20}{20}-$	1	1 90°
6	26	M.	Waiter.	$\frac{20}{20}-$	1	1 90°
				$\frac{20}{20}-$	1	1 90°
7	25	F.	Dressmaker.	$\frac{20}{20}-$	1	1 90°
				$\frac{20}{20}-$	1	1 90°
8	23	F.	Seamstress.	$\frac{20}{20}$	2	75 90°
				$\frac{20}{20}$	2	75 90°
9	40	F.	Dressmaker.	$\frac{20}{20}$	E.	50 90°
				$\frac{20}{20}$	E.	50 90°
10	35	M.	Clerk.	$\frac{20}{20}$	1	1 90°
				$\frac{20}{20}$	1	1 90°
11	34	M.	Physician.	$\frac{20}{20}$	1	Negative.
				$\frac{20}{15}$	1	25 90°
12	18	F.	Dressmaker.	$\frac{20}{20}$	1	1 90°
				$\frac{20}{20}$	1	1 90°
13	32	M.	Bricklayer.	$\frac{20}{20}$	1	1 90°
				$\frac{20}{20}$ w. 50 90°	1	50 90°
14	22	M.	Clerk.	$\frac{20}{20}$	1	1 90°
				$\frac{20}{20}$	1	1 90°
15	23	M.	Porter.	$\frac{20}{20}$	1	25 90°
				$\frac{20}{20}$	1	25 90°
16	37	M.	Physician.	$\frac{20}{20}$	1	25 90°
				$\frac{20}{20}$	1	25 90°
17	20	M.	Clerk.	$\frac{20}{20}$	1	25 90°
				$\frac{20}{20}$	1	25 90°
18	39	M.	Teamster.	$\frac{20}{20}$	2	50 90°
				$\frac{20}{20}$	2	50 90°
19	30	M.	Physician.	$\frac{20}{20}-$	1	Negative.
				$\frac{20}{20}-$	1	Negative.
20	32	M.	Sailor.	$\frac{20}{20}$	1	1 90°
				$\frac{20}{20}$	1	1 90°
21	35	M.	Porter.	$\frac{20}{20}$	4	1 45°
				$\frac{20}{20}-$	3	Negative.
22	26	M.	Gardener.	$\frac{20}{20}$	1	1 90°
				$\frac{20}{20}$	1	1 90°
23	23	F.	Physician.	$\frac{20}{20}$	2	50 90°
				$\frac{20}{20}$	2	25 90°
24	....	F.	Seamstress.	$\frac{20}{20}$ 20 75 90°	1	25 90°
				$\frac{20}{20}$	1	50 90°
25	14	M.	Student.	$\frac{20}{20}$	3	1 90°
				$\frac{20}{20}$ 20 50 90°	3	50 90°

[1] Nagel and Graefe-Saemisch's Handbuch der Pathologie und Therapie, p. 288. [2] Annales d'Oculistique, Mars et Avril, 1883.
[3] Archiv für Augenheilkunde, Bd. vi., S. 37.
[4] Transactions of the American Ophthalmological Society, 1888.
[5] Ibid., 1876.
[6] New York Medical Journal and New York MEDICAL RECORD, April 19, 1890.

A Table Showing the Corneal Astigmatism of 100 Persons (Continued).

Number.	Age.	Sex.	Occupation.	Vision.	Refraction by Ophthalmoscope.	Javal.
26	33	F.	Stenographer.		E.	75 90°
27	17	F.	Silk-picker.		E.	75 90
				$\frac{20}{40}$ $\frac{20}{20}$ w. 50 180°	2	1 90°
					2	50 90°
28	26	F.	Housewife.	$\frac{20}{20}$ —	1	1 90
29	26	M.	Janitor.	$\frac{20}{20}$ —	1	1 90
30	16	M.	Student.		2	50 90°
					2	50 90°
					2	50 90°
				w. 50 90°	3	1.00 90°
31	40	F.	Housewife.		2	50 90°
					2	50 90°
32	30	M.	Clerk.	20 —50 90°	3	1.25 90°
33	18	M.	Student.	20 —50 90°	3	1.25 90°
34	23	M.	Fireman.		3	50 90°
					2	1.00 90
35	21	F.	Housewife.	$\frac{20}{20}$ —	E.	1 90°
				$\frac{20}{20}$ —	E.	1 90°
36	19	M.	Student.		3	2 90°
					3	2 90°
37	32	F.	Housewife.		1	50 90
					1	50 90°
				20 25 cy. 90°	1	1 90
				20 25 cy. 90°	1	1 90°
38	40	M.	Physician.	$\frac{20}{20}$ —	E.	25 90°
					E.	25 90°
39	29	M.	Mason.	$\frac{20}{20}$ —	2	50 90°
				$\frac{20}{20}$ —	2	50 90°
40	30	M.	Physician.			
				w. 25 180°	1	50 180°
					1	50 180°
41	19	F.	Dressmaker.		2	25 90
42	20	F.	Clerk.		2	25 90°
					2	50 90°
43	28	M.	Physician.		2	50 90°
					E.	50 90°
44	28	F.	Housewife.		E.	Negative.
					1	1 90°
45	40	F.	Housewife.		1	1 90°
					1	50 90°
46	25	M.	Physician.		1	50 90°
					1	50 90°
47	21	F.	Teacher.		1	50 90°
					2	1 90°
48	28	F.	Housewife.		2	1 90°
					1	1.25 90°
49	21	F.	Waiter.		1	1.25 90°
					2	Negative.
50	25	M.	Physician.		2	25 90°
				$\frac{20}{20}$ —	1	50 90°
51	21	F.	Housewife.	$\frac{20}{20}$ —	1	50 90°
				no glass.	2	1 90°
52	19	F.	Housewife.		2	50 90°
					2	1 90°
					2	1 90°
53	18	F.	Sewing.	$\frac{20}{20}$ —	1	Negative.
54	15	M.	Student.	$\frac{20}{20}$ —	1	50 90°
					2	1 90
55	19	F.	Student.		2	1.25 90°
				$\frac{20}{20}$ —	1	Negative.
56	36	M.	Clergyman.	$\frac{20}{20}$ —	1	Negative.
					1	25 180
57	23	F.	Housewife.		1	Negative.
					2	1 85°
58	23	F.	Housewife.		2	1 90°
					2	1 90°
59	40	M.	Clerk.		2	1 90°
60	16	F.	Student.		1	Negative.
61	17	F.	Clerk.		2	Negative.
					1	1 90
				R. $\frac{20}{20}$	1	1 90
				L. $\frac{20}{40}$ w. 1.90 cy.	2	2 90
62	22	F.	Dressmaker.	$\frac{20}{20}$ w. 1.90 cy.	2	2 90°
					2	1 90°
					1	1 90°

Number.	Age.	Sex.	Occupation.	Vision.	Refraction by Ophthalmoscope.	Javal.
63	25	M.	Clerk.		2	50 90°
64	18	M.	Clerk.		2	50 90°
65	14	F.	School.		2	1 90°
66	25	F.	Housewife.		3	3 105°
					3	3 90°
67	40	F.	Housewife.		1	Negative.
68	28	M.	Physician.		1	Negative.
69	30	M.	Physician.		1	25 90°
				$\frac{20}{20}$ —	1	25 90°
70	15	F.	Clerk.	$\frac{20}{20}$ —	1	25 90°
71	21	F.	Housewife.		2	1 90°
72	28	F.	Housewife.		1	1 90°
73	19	F.	Housewife.		1	1 90°
74	40	M.	Physician.		2	25 180°
75	24	F.	Nurse.		2	25 180°
76	21	F.	Telegrapher.		2	50 90°
77	39	F.	Dressmaker.		2	1.60 90°
78	21	F.	Housekeeper.		E.	50 90°
79	32	F.	Housewife.		E.	25 90°
80	34	M.	Weaver.		2	50 90°
81	26	F.	Servant.		2	50 90°
82	25	F.	Dressmaker.		1	50 90°
83	11	M.	School.		1	1 90°
84	25	M.	Clerk.		2	25 90°
85	22	M.	Driver.		2	25 90°
86	20	M.	Bartender.		1	25 90°
87	24	F.	Music teacher.		1	1.25 90°
88	27	M.	Clerk.		2	50 90°
89	21	M.	Physician		2	50 90°
90	11	M.	School.		1	1 75°
91	40	M.	Bookkeeper.		1	1 90°
92	40	M.	Car-driver.		1	1 110°
					1	Negative.
				R. $\frac{20}{20}$	1	50 90°
				L. $\frac{20}{20}$ w. 1.90	2	
93	40	M.	Physician.	$\frac{20}{20}$ —	....	2 90°
					E.	25 90°
94	18	F.	Dressmaker.	$\frac{20}{20}$ —	E.	50 90°
95	21	F.	Housewife.		2	1 90°
				R. $(\frac{20}{30}$	2	1 90°
				$(\frac{20}{30}$ w. 1.00 c. 105°	2	1 105°
				L. $(\frac{20}{30}$	2	50 90°
96	24	M.	Student.		3	Negative.
97	25	M.	Physician.		3	Negative.
				$\frac{20}{20}$ —	1	25 90°
98	32	M.	Physician.	$\frac{20}{20}$ —	1	50 90°
					1	50 90°
99	25	F.	Singer.		1	50 90°
					E.	50 90°
100	19	F.	Dressmaker.		E.	50 90°
					2	50 90°
					2	25 90°

As these examinations were intended chiefly to estimate the corneal astigmatism, the examination of the axial refraction, so-called, was made by the ophthalmoscope, and

in some instances by the use of convex glasses. If atropia had been used, or complete paralysis of accommodation had been secured by any means, undoubtedly even a large percentage of hypermetropia would have been found. With the examinations as made there were nine who had no hypermetropia. The corneal astigmatism was as follows:

Table of those Who were not Found to be Hypermetropic.

No.	Age.	Sex.	Occupation.	Astigmatism.	
1	40	Female.	Dressmaker.	0.50	90
2	33	Female.	Stenographer.	0.75	90
3	23	Male.	Fireman.	1.00	90
4	38	Male.	Physician.	.25	90
5	28	Male.	Physician.	R. E. 0.50	90
				L. E.	None.
6	40	Male.	Physician.	R. E. 0.50	90
				L. E. 0.25	90°
7	21	Male.	Physician.	R. E.	None.
				L. E. 0.50	90°
8	40	Male.	Physician.	R. E. 0.25	90°
				L. E. 0.50	90°
9	25	Female.	Singer.	0.50	90°

It will be seen that not one of these who had no hypermetropia by the ophthalmoscope were without corneal astigmatism at least in one eye, but only two had sufficient corneal astigmatism (Cases II. and III. of the subtable) to require correction. One had 1 diopter, the other $\frac{3}{4}$ of a diopter. There are, then, good reasons why those comprising this table should not be asthenopic. Without hypermetropia, except of a low grade at the very most, and in only one case with astigmatism of a degree to usually warrant correction, it would be a surprise if these subjects had asthenopia from local causes.

Of the 100 five had no astigmatism in either eye. All of these were hyperopic, four to the degree of one diopter and one to that of three diopters.

With no Astigmatism.

No.	Age.	Sex.	Occupation.	Vision.	Hyperopia.
1	30	Male.	Physician.	$\frac{20}{20}$	1 D.
2	19	Female.	Student.	$\frac{20}{20}$	1 D.
3	40	Male.	Clerk.	$\frac{20}{20}$	R. 1 D.
					L. 2 D.
4	25	Female.	Housewife.	$\frac{20}{20}$	1 D.
5	24	Male.	Student.	$\frac{20}{15}$	3 D.

As far as this table indicates anything, it shows that hypermetropia of itself is not necessarily a cause of asthenopia. The one case of a moderately high degree, three diopters, was that of a student of nineteen years of age. She may yet have asthenopia if three diopters of hyperopia be sufficient to cause it. It should be remembered that all these subjects were questioned not only as to having asthenopia at the time of examination, but also as to whether they ever had had an attack of inability to continue to use their eyes in near work.

There were seven who had astigmatism in one eye only.

Astigmatism in One Eye Only.

No.	Age.	Sex.	Occupation.	Vision.	D.	Astigmatism.	
1	34	M.	Physician.	$\frac{20}{20}$	1 D.	L. E. 0.25	90
2	35	M.	Porter.	$\frac{20}{15}$	3 D.	R. E. 1.00	45
3	28	M.	Physician.	$\frac{20}{20}$	None.	R. E. 0.50	90
4	21	F.	Waitress.	$\frac{20}{20}$	2 D.	L. 0.25	90
5	18	F.	Seamstress.	$\frac{20}{20}$ —	1 D.	L. E. 0.50	90
6	36	M.	Clergyman.	$\frac{20}{20}$	1 D.	R. E. 0.25	180°
7	21	M.	Physician.	$\frac{20}{20}$	None.	L. E. 0.50	90
8	40	M.	Bookkeeper.	$\frac{20}{20}$	1 D.	R. 1.00	110°

No. 2 in this case has the optical conditions to cause asthenopia. There is a considerable degree of hyperopia (3 D.) and astigmatism in one eye, of one diopter axis 45°. This subject, however, has an occupation not necessarily involving much use of the eyes upon near objects, and he may escape until he is presbyopic, when if he reads much he may require a correction of his astigmatism in one eye to be comfortable; but if he reads very little he may not need anything but spherical glasses.

Another of this table, No. 8, a bookkeeper, would be presumed to require correction of his refractive defect, for he has one diopter of hypermetropia added to a diopter of astigmatism, the latter in the right eye, axis 110°. The remainder, however, I do not think would be expected, even under considerable use of the eyes, to have asthenopia.

Thirteen had less than half a diopter in both eyes, as follows:

Less than Half a Diopter of Astigmatism in Both Eyes.

No.	Age.	Sex.	Occupation.	Vision.	D.	Astigmatism.	
1	25	Male.	Clerk.	$\frac{20}{20}$	1 D.	0.25	90
2	11	Male.	Scholar.	$\frac{20}{20}$	2 D.	0.25	90°
3	34	Male.	Weaver.	$\frac{20}{20}$	2 D.	0.25	90°
4	40	Female.	Housewife.	$\frac{20}{20}$	1 D.	0.25	90°
5	28	Male.	Physician.	$\frac{20}{20}$	1 D.	0.25	90°
6	30	Male.	Physician.	$\frac{20}{20}$	1 D.	0.25	90°
7	28	Female.	Housewife.	$\frac{20}{20}$	2 D.	0.25	90°
8	40	Male.	Physician.	$\frac{20}{20}$	None.	0.25	90°
9	23	Male.	Porter.	$\frac{20}{20}$	1 D.	0.25	90°
10	37	Male.	Physician.	$\frac{20}{20}$	1 D.	0.25	90°
11	20	Male.	Clerk.	$\frac{20}{20}$	1 D.	0.25	90°
12	25	Male.	Physician.	$\frac{20}{20}$	2 D.	0.25	90°
13	31	Male.	Physician.	$\frac{20}{18}$	1 D.	0.25	90°

Not one of this table can be said to be liable to asthenopia from refractive error, unless two diopters of hyperopia, which four of the subjects had, are thought to constitute such a liability.

Twenty-three had astigmatism of just one-half a diopter in both eyes.

Astigmatism of One-half a Diopter in Each Eye.

No.	Age.	Sex.	Occupation.	Vision.	Hypermetropia.
1	25	Female.	Singer.	$\frac{20}{20}$	None.
2	32	Male.	Physician.	$\frac{20}{20}$	1 D.
3	21	Female.	Telegrapher.	$\frac{20}{20}$	R. 2 D.
					L. 1 D.
4	39	Female.	Dressmaker.	$\frac{20}{20}$	1 D.
5	20	Male.	Bartender.	$\frac{20}{20}$	2 D.
6	27	Male.	Clerk.	$\frac{20}{20}$	2 D.
7	25	Male.	Clerk.	$\frac{20}{20}$	2 D.
8	24	Female.	Nurse.	$\frac{20}{20}$	2 D.
9	40	Female.	Housewife.	$\frac{20}{20}$	1 D.
10	25	Male.	Physician.	$\frac{20}{20}$	1 D.
11	25	Male.	Physician.	$\frac{20}{20}$	1 D.
12	40	Female.	Housewife.	$\frac{20}{20}$	2 D.
13	19	Male.	Student.	$\frac{20}{20}$	1 D.
14	29	Male.	Mason.	$\frac{20}{20}$	2 D.
15	30	Male.	Physician.	$\frac{20}{20}$	
				R. $\frac{20}{20}$ w. 25 180	180°
				L. $\frac{20}{20}$	1 D. 180°
16	20	Female.	Clerk.	$\frac{20}{20}$	2 D.
17	39	Male.	Teamster.	$\frac{20}{20}$	2 D.
18	26	Male.	Janitor.	$\frac{20}{20}$	2 D.
19	13	Male.	Student.	$\frac{20}{20}$ —	1 D.
20	40	Female.	Dressmaker.	$\frac{20}{20}$	None.

In only one of these, No. 15, a physician, was the axis 180° (astigmatism against the rule). Here we might expect asthenopia, or at least if it occurs, we certainly would explain it by the existence of half a diopter of astigmatism against the rule. In none of the other of this table of twenty cases should we expect asthenopia. The astigmatism equalled 0.75 of a diopter, as follows, in two subjects:

No.	Age.	Sex.	Occupation.	Vision.	Hyperme-tropia.	Axis of As.
1	23	Female.	Seamstress.	20/20	2 D.	90°
2	33	Female.	Stenographer.	20/20	None.	90°

Three-fourths of a diopter (axis 90°) is the first degree of corneal astigmatism that I am in the habit of correcting. One of these patients it will be noted had two diopters of hypermetropia.

Twenty-five, or one-fourth of the whole number, had 1 D. of astigmatism in each eye, as follows:

No.	Age.	Sex.	Occupation.	Vision.	Hypermetropia.
1	12	F.	Student.	20/20—	1 D.
2	26	M.	Waiter.	20/20—	1 D.
3	25	F.	Dressmaker.	20/20—	1 D.
4	18	F.	Dressmaker.	20/20	1 D.
5	22	M.	Clerk.	20/20	1 D.
6	32	M.	Sailor.	20/20	1 D.
7	26	M.	Gardener.	20/20	1 D.
8	26	F.	Housewife.	20/20—	1 D.
9	23	M.	Fireman.	20/20	None.
10	32	F.	Housewife.	20/20	1 D.
11	28	F.	Housewife.	20/20	1 D.
12	19	F.	Housewife.	20/20	2 D.
13	23	F.	Housewife.	20/20	2 D., R. E. 85°
14	23	F.	Housewife.	20/20	2 D.
15	16	F.	Student.	20/20	1 D.
16	22	F.	Dressmaker.	20/20	R. E. 2 D. L. E. 1 D.
17	18	M.	Clerk.	20/20	2 D.
18	15	F.	Clerk.	20/20	1 D.
19	21	F.	Housewife.	20/20	1 D.
20	25	F.	Dressmaker.	20/20	1 D.
21	24	F.	Music-teacher.	20/20	1 D., R. E. 75° L. E. 90°
22	11	M.	Student.	20/20	2 D.
23	18	F.	Dressmaker.	20/20	1 D.
24	35	M.	Clerk.	20/20	1 D.
25	21	F.	Teacher.	20/20	2 D.

In this table the symmetry of the conditions is interesting. The axis was 90° in all of the cases but two. In one eye of one of these, it was 85°. In one of the others it was 75°. The hypermetropia also was one diopter in two-thirds of the subjects. In one case there was none. In seven cases it was two diopters.

In four of the subjects the corneal astigmatism was more than one diopter in both eyes, as follows:

No.	Age.	Sex.	Occupation.	Vision.	H.	Axis.
1	30	Male.	Clerk.	20/20	3 D.	1.25
2	28	Female.	Housewife.	20/20	1 D.	1.25
3	14	Female.	Student.	20/20	3 D.	3.00 105° 90°
4	22	Male.	Driver.	20/20	1 D.	1.25

No doubt the third one of the table, who was one of fourteen other students examined, if she remains a student or in any occupation requiring close use of her eyes, will require glasses, for she has three diopters of astigmatism, added to three diopters of hyperopia. The others may easily escape the need of correction of the astigmatism until presbyopia comes upon them.

In twenty-six of the subjects the eyes of the same subject differed in the degree of astigmatism as follows:

No.	Age.	Sex.	Occupation.	Vision.	H.	Axis.
1	34	M.	Physician.	20/20	1 D.	R. None. L. 0.25
2	32	M.	Bricklayer.	20/20	1 D.	R. 1 D. L. 1.50
3	35	M.	Porter.	20/20 L. 20/30	4 D.	R. 1 D. 45° L. None.
4	23	F.	Porter.	20/20	2 D.	R. 0.50 L. 0.25
5	....	F.	Seamstress.	20/40 L. 20/20	1 D.	R. 1.25 L. 0.50
6	24	M.	Student.	20/20	3 D., 1 D.	1.25
7	17	F.	Silk-picker.	20/20 L. 20/40	2 D.	R. 1.00 L. 0.50
8	16	M.	Student.	20/30 L. 20/40	2 D 3 D.	R. 0.50 L. 1 D.
9	18	M.	Student.	20/20	3 D.	R. 0.50 L. 1 D.
10	19	F.	Dressmaker.	20/20	2 D.	R. 0 25 L. 0.50
11	....	M.	Physician.	20/20	None.	0.50 None.
12	21	F.	Waitress.	20/20	2 D.	R. None. L. 0 25
13	21	F.	Housewife.	20/20 20/30	2 D.	R. 1 D. L. 0.50
14	18	F.	Seamstress.	20/20	1 D.	R. None. L. 0.50
15	15	M.	Student.	20/20	2 D.	R. 1.00 L 1.25
16	36	M.	Clergyman.	20/20	1 D.	R. 0.25 180° L. None.
17	19	F.	Housewife.	20/20	2 D.	R. 0.50 L. 1 D.
18	40	M.	Physician.	20/20	None.	R. 0.50 L. 0.25
19	32	F.	Housewife.	20/20	1 D.	R. 1 00 180° L. 0.50 180°
20	26	F.	Servant.	20/20 20/20	2 D.	R. 2.00 L. 1.50
21	21	M.	Physician.	20/20	2 D.	R. None. L. 0.50
22	40	M.	Bookkeeper.	20/20	1 D.	R. 1.00 110° L. None.
23	40	M.	Physician.	20/20	None.	R. 0 25 L. 0.50
24	21	F.	Housewife.	20/30 20/20	2 D.	R. 1.00 105° L. 0.50 90°
25	25	M.	Physician.	20/20	1 D.	R. 0.25 L. 0.50
26	19	F.	Dressmaker.	20/20	2 D.	R. 0.50 L. 0.25

The analysis of this table shows that eight were under twenty years of age, so that their danger from asthenopia is by no means past. The axis of astigmatism was 90° except in four cases. In one it was against the rule on both sides, or axis 180°.

It is seen at a glance that 13 of the 100, namely, the two waiters, the bricklayer, the two porters, the gardener, the janitor, the fireman, the mason, the bartender, the car-driver, the sailor and teamster, had occupations that did not necessarily or probably involve any use of the eyes on fine or near objects. Undoubtedly such subjects have immunity from asthenopia, as compared with persons like the others of the total number, who must of necessity use their accommodative power very considerably, and in the case of seamstresses and dressmakers generally beyond proper limits; but it never should be forgotten that sound eyes, like other sound organs, are the better for use.

I should have much preferred to make these examinations only upon persons of the age of at least twenty-five years. The school-children in the list are not so good observers as to the existence of asthenopia, nor can they be said to be beyond the danger of it, until they have come to years when study, seriously and for several continuous hours, is habitual. But it is very difficult to secure even the class I have found with closer discrimination than Dr. Deynard has made. We have therefore made this presentation as a fair beginning only of a line of investigation which promises considerable addition to our knowledge of the normal refraction of the eye. I shall not attempt to make many deductions from the facts of the table until they have been confirmed by subsequent observations with the ophthalmoscope and ophthalmometer by myself or others. This much I can say, however, the table adds to the already overwhelming evi-

dence that emmetropia is an ideal condition. It is doubtful if the use of atropia would have left one case of the general table that was neither hypermetropic in the axis of the eye or in the cornea. Negatively, the fact that the larger proportion of these had not the condition, that is to say, a considerable degree of astigmatism, that would lead us to expect asthenopia, were it uncorrected, while nearly all had hypermetropia, and of a decided degree, leads us to believe that hypermetropia is not a powerful factor in producing asthenopia, and that Donders's teaching remains true, that one to two diopters are readily overcome in youth. This I believe to be the accepted doctrine, except among those who believe that all hypermetropic eyes should be corrected into emmetropic by glasses.

I consider in analyzing the table of 100 that eleven had optical conditions that would generally be considered sufficient to account for asthenopia did it occur.

Occupations.

Physicans	18	Teacher	1
Students	13	Singer	1
Dressmakers or Seamstresses	12	Weaver	1
Clerks	12	Bookkeeper	1
Stenographer	1	Clergyman	1
Silk-picker	1		
Telegrapher	1	Total	64
Music-teacher	1		

The above table may be said to comprise those who have asthenopic occupations.

Non-asthenopic Occupations.

Nurses	2	Fireman	1
Waiters	2	Mason	1
Bricklayer	1	Bartender	1
Porters	2	Car-driver	1
Teamsters	2	Servant	1
Sailor	1		
Gardener	1	Total	36
Janitor	1		

A careful and frequent reference to Donders's writings upon refraction and accommodation shows that he omitted very few of the principles upon which an exact knowledge of this subject depends. What advances have been made are upon lines that he clearly laid out, even if he did not always see all that is actually on them. On the subject of the axis of greatest curvature of the cornea he was very positive, although the knowledge of astigmatism as a frequent anomaly was very recent and first demonstrated by him. Some of the observations of his time do not fully agree with him in all points, but he usually turns out to be right. For example, he says:[1] "As to the normal (astigmatism), the cause is in general, for the most part, to be sought in the cornea and the direction of the principal meridians, for the whole dioptric system, as well as for the cornea in particular, is of that nature that the meridian of maximum of curvature usually approaches to the vertical, that of minimum to the horizontal."

Again[2] he says: "Absolute emmetropia in one of the principal meridians is a condition not easily met with."

Donders is sometimes erroneously quoted as saying that $\frac{1}{40}$—about a diopter—of astigmatism may be considered normal, but he says exactly the reverse of this, for example: "If it (corneal astigmatism) amount to $\frac{1}{40}$ or more, it must be considered as abnormal." Then again he is more emphatic (on page 512): "Boundaries between normal and abnormal astigmatism do not exist when it attains the degree of $\frac{1}{40}$ (1 diopter). I have called it abnormal because the disturbance of vision is of that nature that cylindrical glasses are desirable for its improvement, but otherwise it is evident that the limit I have fixed upon is rather arbitrary. With much slighter degrees the acuteness of vision is no longer perfect."

Donders then goes on to show that an astigmatism in his own eyes of about $\frac{1}{100}$ was capable of being improved by cylindrical glasses. He criticises Knapp's standard of normal astigmatism as being too high. He also says that of forty to fifty eyes one at least is disturbed in its functions by astigmatism. With his exact knowledge of the frequency, the axis of greatest curvature, the degree of what constitutes an abnormal astigmatism, Donders marked out the road on which many of us are now travelling; that is to say, that astigmatism, and not hyperopia, is the dominant cause of asthenopia. Important as is the axial length of the eyeball in one respect, the acuity of vision, in the production of asthenopia, the corneal astigmatism is more important. I do not claim that this is Donders's teaching. He did not know of the frequency of astigmatism of a considerable degree. He could not then teach this. It was his idea that hypermetropia was at the bottom of most asthenopia; but I do claim that this doctrine, with our increased facilty in determining the degree of astigmatism, is legitimately deduced from the principles that he laid down in discussing astigmatism.[1]

Donders is very clear on the subject of the lessening of the corneal astigmatism by the lens. He thinks that occasionally the lens may increase the corneal astigmatism, but commonly[2] it diminishes it. He says that the lens may take part in astigmatism in two ways, "by the form of curvature, and by an oblique position." Those who lightly estimate the ophthalmometer as a means of determining the degree and axis of astigmatism are constantly speaking of this action of the lens, as if it were something that cannot be estimated, and which destroys the value of the readings of the Javal and Schlotz instrument. The measurement of thousands of eyes by the ophthalmometer in the hands of Javal and his followers, has demonstrated the truth of Donders's statement that the lens commonly lessens corneal astigmatism—and this is a recent observation—by about one-half, a diopter when the axis is 90°, while none at all when the axis is 180° in hypermetropic eyes, and 90° in myopic. Donders attached great importance to Helmholtz's instrument. If that from which calculations must be made after the corneæ were measured was so highly esteemed, how much more valuable the modern instrument, which notes the astigmatism and makes the calculation for us, and that in a moment of time.

Keeping Cholera out of Cuba.—The Cuban health officials have a wholesome dread of cholera, as great perhaps as that of the dwellers about the Great South Bay, and they were determined that the disease should not get at them by way of New York. In September last a steamer left New York with a clean bill of health for Cuba. When she arrived, a week later, at Guantanamo the health officer of the port rowed within hailing distance and shouted out to have the passengers and crew mustered up on deck. He counted them and had them sent below, and then came near enough to the ship to get the bill of health. This he sprayed carefully with carbolic acid and then read it to see if it tallied with his count. Then he went away leaving the vessel in quarantine. At the end of four days he ventured aboard, fumigated the boat and sprayed each passenger and member of the crew with carbolic acid. After this he boldly released the ship. From this port the ship went to Santiago. There she was fumigated and the passengers and crew were made to march around a pot of burning sulphur on deck. After leaving Santiago the vessel proceeded to Cienfuegos and there was fumigated and sprayed again. Then she came back to New York, and Cuba was left with her yellow fever all alone.

[1] Anomalies of Accommodation and Refraction, English Edition, p. 490.

[2] Loc. cit., p. 515.

[1] In a paper upon the asthenopia of astigmatic individuals, Dr. George T. Bull, of Paris, formerly of New York, read before the French Ophthalmological Society, states his belief that asthenopia is most frequent in astigmatism direct (according to the rule), and in mixed astigmatism. He classified astigmatism as direct, inverse, oblique, and mixed (*Comptes Rendus de la Société Française, d'Ophthalmologie*).

[2] Loc. cit., p. 131.

FEEDING IN FEVERS.[1]

By GEORGE L. PEABODY, M.D.,

NEW YORK.

In opening the discussion this evening, I wish to say that I am here to learn rather than to teach, and to find out from my colleagues who are present whether they do not think that it is common in practice to-day to adhere too rigidly to older methods in feeding fever patients. I refer not only to the continued fevers, but to the eruptive fevers and those that occur with many varieties of inflammations. In following other physicians in the hospitals to which I am attached, *i.e.*, in succeeding them in attendance each year when my term of duty begins, I always find a certain number of fever patients, and I usually find that they are allowed only fluid foods. Of these foods milk is the most important. Milk seems to be generally regarded as a fluid, and a very harmless-looking fluid it certainly is when it is put into the stomach; but if it is to be digested and assimilated at all, it is very soon transformed into a bulky solid after it reaches the stomach.

There are many patients to whom milk in any form is repugnant, and to some of these it is exceedingly difficult of digestion. It has been my practice for many years, in all kinds of illness, but especially in the presence of fever, to pay regard to the appetite and desire of the patient. If a patient is really hungry solid food of a properly selected kind and in judicious quantity will rarely disagree with him. With hospital patients it is not always easy to ascertain whether they are really hungry. Many will profess hunger without being hungry because they suppose that they will recover more quickly if they eat freely. To them, of course, other solid food than milk should not be given, but if they are genuinely hungry I believe it is safe to presume that the stomach is prepared again to resume its function, that gastric juice is again secreted, and that properly selected albuminous food in judicious quantity will be digested if you give it.

We are accustomed, I think, to have too great a dread of doing harm at the site of lesion in the ileum in typhoid fever by giving solid food. If I am correct in my opinion as to the inference to be drawn from hunger in a fever patient, there is even less likelihood of causing damage to an ulcerated ileum by giving finely divided egg or beef or chop to such a patient than by giving him milk; and my experience seems to justify the inference. It has been my practice for years to allow albuminous foods of these descriptions to such patients, even before the fever leaves them, under these conditions. I have at present under treatment several patients with typhoid fever whose temperatures reach 101°, 102°, and 103° F., daily, who are hungry, and who are receiving such solid food once a day. So far as I am aware I do not have a larger percentage of relapses or hemorrhages or other serious complications or accidents in my practice than I did before I adopted this plan, or than my colleagues do who have not yet adopted it.

Even tea and coffee and beer are not allowed by many doctors; in my hands they have been very useful when given to those who have been accustomed to them in health and desire them in fevers. Well-cooked oatmeal is another very nutritious food that I allow under the same conditions as meat.

When the appetite fails, in consequence of the presence of fever, meat becomes more repugnant than any other food as a rule. Then it would be most injudicious to force it upon a patient; but the returning appetite, the awakening desire for meat, I believe to be nearly always an indication that the stomach is prepared to take care of it. That much is gained by maintaining the nutrition of fever patients needs not to be mentioned to the members of this Society. Of course, the necessity of giving an abundance of water is not to be lost sight of.

[1] Remarks at a meeting of the Practitioners' Society, November 4, 1892.

What I have said of feeding typhoid-fever patients is equally true in other forms of fever. It is, in my judgment, a mistake to withhold solid food merely because a patient has fever, and it is incorrect to regard milk as a fluid food, as our knowledge of the physiology of digestion teaches us. Our knowledge of the form in which milk often appears in the fæces emphasizes this latter fact. Milk will always remain the most serviceable general food in disease, and especially in fever, largely because it is swallowed with much less effort than attends the taking of other foods; because it is the cheapest of the foods; because it requires little or no preparation, and because it is so commonly well borne. But where it fails to nourish the patient, where it is not well borne, where it cannot be taken, for any reason, it is well to remember that efficient adjuncts and substitutes are within reach.

INTRA-UTERINE INJECTIONS OF GLYCERINE.

A Simple, Safe, and Efficient Means for the Induction of Labor, and the Stimulating of Uterine Contractions.

By J. CLIFTON EDGAR, M.D.,

ATTENDING PHYSICIAN TO THE ASYLUM OF THE NEW YORK LYING-IN HOSPITAL; ASSISTANT OBSTETRIC SURGEON TO THE NEW YORK MATERNITY HOSPITAL.

Case I. *Pelvic Contraction.*—Seen in the service of the Asylum of the New York Lying-in Hospital. Both parents of this patient are living and apparently healthy. The mother's height is four feet seven inches; she has had nine children, and states that no difficulty was experienced in her labors.

Of the four daughters the eldest died as the result of an abortion, occurring at the third month.

The second daughter, thirty years of age, is four feet eight inches in height, and has had four children at term and two abortions, at the seventh week and third month respectively. All the children born at term were still born, although, as she states, "she felt life up to the last moment" before going into labor. The first labor, at term, was difficult and prolonged, and the second and third were instrumental.

The third daughter is twenty-six years of age, has been married four years, and is four feet eight inches in height. She has had two children, of which the first was still-born at full term.

The fourth daughter is twenty-five years of age, and is four feet seven and one-half inches in height, and has given birth to one child, which was delivered by instruments at full term after a prolonged labor, and only survived a few hours.

This woman was first seen by the writer on October 27, 1892, at 10.30 A.M., and found to be about thirty-eight weeks pregnant. She was well-nourished, cheerful, and had an erect attitude; varicose enlargement of the veins of the lower extremities were present, but no œdema. Urine, alkaline, 1.020; no albumin, no sugar. Fœtal movements to the left and strong; fœtal heart-sounds strong and 148 to the minute.

The following pelvic measurements are recorded: Distance of fundus from symphysis, 13 inches; distance of ensiform from symphysis, 14 inches; distance of umbilicus from symphysis, 6 inches; circumference of abdomen at umbilicus, 34 inches; circumference of pelvis, 33 inches; distance between spines, 8½ inches; between crests, 10 inches; between trochanters, 11 inches. The conjugata vera was estimated to be 3½ inches, after three observers had measured the same independently and their results compared.

As the woman became pregnant soon after her last confinement, there was no menstrual period from which to estimate the duration of gestation.

Taking into account, however, the height of the fundus, the size of the fœtal head, the length of the fœtal ellipse, and the amount of dilatation at the internal os,

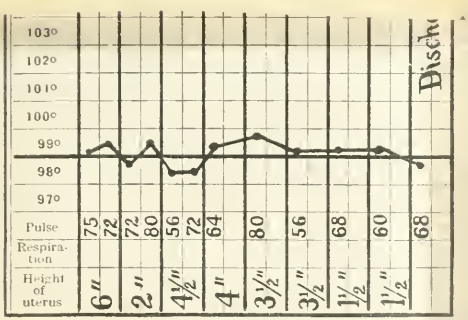
it was estimated that the patient was still within two weeks or ten days of full term.

Recalling the previous history of the woman and of her sisters, the writer decided that the interests of the child, to say nothing of the mother, demanded the induction of premature labor, which was immediately performed in the following manner :

The woman was brought to the edge of the bed, the bladder emptied, and the vulva and vagina were scrubbed with green soap and water, and, finally, with a solution of the bichloride of mercury, 1 to 2,000. Then, under the strictest aseptic and antiseptic precautions, the anterior cervical lip was seized in the grasp of a double volsella forceps, and the cervix drawn down nearly to the vulva. The internal os was found to admit the point of the index-finger. Half an ounce of sterilized glycerine was then slowly injected between the membranes and the uterine wall by means of a No. 9 (English scale) braided silk catheter, connected with a simple glass syringe. The catheter was introduced to a distance of eight inches from the external ring of the cervix. No pain was apparently caused by the operation, and the woman, in the dorsal position, with her hips raised by pillows, was left in the charge of a physician.

The injection was made at 11.30 A.M., October 27, 1892. At 2 P.M. strong uterine contractions set in, and at 8.05 P.M. the third stage of labor was completed.

The membranes ruptured spontaneously at the end of the first stage : vaginal secretion was moderate in the first [illegible] in the second ; the pre-



Record of the Puerperium.

The mother made an uninterrupted recovery. At no time during the puerperium did the temperature rise above 99.2° F. The child at the present writing is still living and in excellent health. Nothing can exceed the happiness of the mother in obtaining a living child, because from her own experience and that of her sisters' she had come almost to look upon such an event as an impossibility.

Summary of Labor.—Intra-uterine injection of one-half ounce of glycerine, October 27, 1892, 11 30 A.M.

First Stage.—Began October 27, 1892, 2 P.M.; terminated, 7.30 P.M. ; duration, 5 hours 30 minutes.

Second Stage.—Began October 27, 1892, 7.30 P.M.; terminated, 8 P.M. ; duration, 30 minutes.

Third Stage.—Began, October 27, 1892, 8 P.M. ; terminated, 8.05 P.M. ; duration, 5 minutes.

Total duration of labor, 6 hours 5 minutes.

Temperature at beginning of labor, 99.01° F. ; at end of labor, 98.2° F.

Pulse at beginning of labor, 84 ; at end of labor, 72.

Height of fundus, one hour after delivery, above symphysis, 5½ inches.

CASE II. *Low Implantation of the Placenta.*—This case was seen by the writer in the service of the New York Maternity Hospital, Blackwell's Island.

Patient was twenty-six years of age ; American ; domestic ; IV.-para. Previous to the present pregnancy has suffered from one abortion and one miscarriage ; was admitted to the Maternity, September 8, 1892, stating that her last menstruation occurred February 26, 1892, and quickening, June 1, 1892.

In June last, as the result of traumatism, symptoms of threatened abortion, pain, and hemorrhage were present for a short time. Subsequently, at intervals, there were slight hemorrhages until September 29, 1892, when a hemorrhage occurred which necessitated her being confined to her bed for several days. Slight blood losses took place at intervals until October 26, 1892, when the loss of several ounces of blood occurred, and the patient was kept quiet in bed until her confinement.

Upon October 26, 1892, the patient was seen by the writer for the first time, and upon vaginal examination the head was readily made out, together with a somewhat firm mass, which latter lay to the left of the head within the lower part of the uterus and caused the head to rest upon the right brim of the pelvic excavation.

At this examination the writer dilated the internal ring of the cervix with the index-finger, and after passing it into the uterus as far as the second joint, the edge of the placenta could be distinctly felt attached to the uterine wall, one and one-half to two inches above the internal ring upon the left side. Patient's temperature was normal ; pulse, 82 ; urine, normal ; fœtal heart-sounds somewhat feeble, and 142 ; pelvic measurements show nothing unusual.

Upon November 13th, in the night, hemorrhage to the extent of several ounces occurred, and the writer saw the patient again November 14th, at 11 A.M.

Patient's pulse at this time was 64 ; temperature, 98.5° F. ; respirations, 22 ; fœtal heart-sounds, 128 ; fœtal movements moderately vigorous, and to right side of abdomen.

Although the blood loss had been comparatively small in amount, yet the patient presented an extremely anxious countenance, an irritable pulse, which the most trivial cause affected, and a constant dread of a recurrence of the hemorrhage.

It was thereupon decided that the interests of the child as well as the mother demanded the emptying of the uterus.

Accordingly, at 12.25 A.M., November 14, 1892, I introduced into the uterus, in the presence of the Maternity staff, without much difficulty, after dilating the internal os with the index-finger, half an ounce of sterilized glycerine.

The catheter in this instance, a No. 10 (American scale) with a small bulbous point, was of braided silk, and twelve inches of its length was passed into the uterus before the glycerine was slowly injected. The same precautions were used as in Case I. Upon the catheter being slowly withdrawn, the smallest sized Barnes's dilator was placed in the cervix and injected with creoline solution, one half per cent.

At 11.55 A.M., thirty minutes from the introduction of the glycerine, good uterine contractions were present, and the first stage of labor was well under way. At 1.30 P.M.

the Barnes's bag was expelled from the cervix, and was replaced by the largest size, great care being taken to preserve the membranes intact. At 3 P.M. this latter dilator was expelled, and at 3.30 P.M., the head not engaging in the pelvic brim, one ounce more of glycerine was injected high up between the membranes and uterine wall as before. Soon afterward the head engaged, and the first stage was completed at 9 P.M., when the membranes ruptured spontaneously, and this was followed by the completion of the second stage at 9.20 P.M., the placenta almost immediately following.

During the first and second stages not more than three ounces of blood was lost, and somewhat less than usual at the termination of the second stage and during the third.

The child, a female, four pounds seven ounces in weight, was born somewhat asphyxiated, and was exceedingly feeble and poorly nourished, and its measurements corresponded to about the thirty seventh week of gestation. It was resuscitated, but lived only four hours.

Summary of Labor.—Intra-uterine injection of half ounce of glycerine, November 14th, 11.25 A.M.

Second injection of one ounce, at 3 30 P.M.

First Stage.—Began November 14th, 11.55 A.M.; terminated, 9 P.M.; duration, 9 hours 5 minutes.

Second Stage.—Began November 14th, 9 P.M.; terminated, 9 20 P.M., duration, 20 minutes.

Third Stage.—Began November 14th, 9.20 P.M.; terminated, 9.35 P.M.; duration, 15 minutes.

Total duration of labor, 9 hours 40 minutes.

Pulse before delivery, 82; after, 64.

Temperature after delivery, 98.5° F.

The mother made an uninterrupted recovery, the maximum temperature, pulse, and respiration markings recorded for the first seven days of the puerperium being 99° F., 84, and 24 respectively.

Remarks.—The report of Pelzer's five cases—four successful—of the induction of premature labor by the intra-uterine injection of glycerine caused the writer to make use of the same method in the two cases above narrated.

Although it would be perhaps unwise to draw any conclusions from so small an experience, yet the method certainly appears to possess all that Pelzer originally claimed for it.

The amount of glycerine used (one-half ounce) was smaller in my cases than in those of Pelzer, who used from an ounce and three-quarters to four ounces.

My experience with the second injection of one ounce in Case II., to strengthen the uterine contractions, would certainly induce me to use large amounts in subsequent cases, although half an ounce of the glycerine caused labor pains to appear in two and a half hours in Case I., and in thirty minutes in Case II.

Pelzer used the method to stimulate already existing uterine contractions, and found that feeble pains were strengthened by the injection.

The effect of the second injection in Case II. could be almost immediately observed, and resulted in the head of the fœtus engaging and descending into the pelvic cavity.

It was not found necessary to resort to the knee-chest or semi-prone positions, as in no instance did glycerine follow the withdrawal of the catheter. The pelvis in each case, however, was elevated by pillows.

No great difficulty was experienced in the introduction of the catheter in either instance; it was allowed to take the direction of least resistance in Case I. and that direction was along the posterior uterine wall. In Case II., however, the catheter was directed along the right uterine wall to avoid further separation of the placenta, and as the head in this case blocked the way it was easily raised and held to the left by the hands of my assistant.

The drawing down of the cervix by means of a volsella forceps the writer believes to be of importance, as he feels sure the passage of the catheter in both instances, but more particularly in Case II., would have been attended with great difficulty, if not rendered altogether impossible, had this not been done.

No hemorrhage followed the operation in either case; in the first case the catheter was not even stained with blood, in the second a few drops of blood were observed about the eye of the catheter when withdrawn.

It need not be added that the strictest aseptic and antiseptic measures should be observed.

The glycerine used was first boiled in an evaporating dish and then conveyed directly to a bottle which, together with its cork, had been boiled for a considerable time.

To avoid the introduction of even the smallest amount of air, a catheter with a solid tip was used in Case II., and in Case I. the tip was rendered solid by filling it with a mixture of plaster of Paris and iodoform.

The chemical affinity of the glycerine for water resulted in so great a serous discharge from the uterus that several times those in charge of the labors believed that the membranes had ruptured, which subsequent examination proved to be untrue.

Further investigation alone can determine whether this chemical property of the glycerine, or its action as a foreign body in the uterine cavity, or the mechanical separation of the membranes, or all three, determines the onset of labor in this new method.

115 East Thirty-Fifth Street.
November 22, 1892.

[1] Archiv für Gynakol., Band xlii., Heft 2.

Psorospermosis.—Dr. Boeck reviewed, in the recent International Dermatological Congress, the history of Darier's disease, and showed photographs of the four cases which he had himself observed. The speaker could not agree with Darier as to the nature of the round corpuscles described by him and regarded as parasites. He believes them to be simply altered cell-elements.

Dr. Neisser thought two diseases offered special facilities for the study of psorosperms: Paget's disease and molluscum contagiosum. In the first the parasitic nature of the disease is not yet established. For molluscum we may consider the matter a settled fact. He had succeeded in following nearly every stage in the evolution of these corpuscles, and determined the fact that they correspond almost entirely with the psorosperms from the liver of the rabbit.

Can School Children be Intellectually Over-tasked?—Professor Charcot, of Paris, has expressed himself as follows upon this important subject (*The Alienist and Neurologist*): I am not prepared to believe in the possibility of exacting and effecting excessive work with young pupils. In the higher technical schools I must admit the danger; but in the elementary and middle classes, up to a certain age and grade of instruction, it appears to me to be extremely improbable. I do not believe it practicable to overtax a child with study and instruction. It has too low a sense of responsibility. If you put to it a ques-

tion, of the answer to which it knows nothing, it simply does not reply. I remember perfectly well how, as a child, I behaved when something repugnant to my inclination was required of me. I simply did not do the thing demanded, but something else. At an appropriate age one may certainly be intellectually overburdened, but it is not in the age of childhood. It has been the very rarest of my experience to encounter neurasthenia in children. I do not, of course, now speak of that species of overtaxation which takes place in unhealthy and overcrowded rooms, where bad ventilation produces *ennui* and engenders disease. I mean purely intellectual overtaxing; and I do not believe that this occurs in children. Only when children reach the age of fifteen or seventeen years, and begin to undergo serious examinations in their school work, can any talk be made of overtasking. Nor must we then confound with the latter condition a disease which I have termed *cephalæa adolescentium*. Children who suffer from this disease are afflicted with unceasing headache, and study becomes absolutely impossible. Neurasthenics experience abatement and pause in their headaches, whereas in the disease which I have named there are no remissions. The sufferers usually belong to nervous or arthritic families. They complain of palpitation of the heart, and latterly hypertrophy of this organ has been established in such adolescents. But the morbid state of which I speak has no connection whatever with overburdening at school. Nor must we fancy that it can be dispelled by rest or ordinary therapeutic means. It is extremely obstinate, and successfully resists all medical treatment. I advise you to subject such patients to the rudest kind of physical labor. If they have reached the appropriate age for military duty I counsel you not to discourage them from service under the flag. On the contrary, urge their parents to force them into it. I have known boys who suffered from *cephalæa adolescentium* to such an extent as to be incapable of all reading and study, not only to render efficient service as cavalry soldiers or dragoons, but thereby to experience the most gratifying recovery. I once told a father that his son would get well of this trouble by exposure to rude physical work. I lost both father and son from sight; but a year later the former wrote me, "I have good news to give you of my son." He had sent the tender youth to a fisherman at Arcachon, to accompany and assist the latter in his rough and strenuous employment. He pursued it seven or eight months, and thereby surmounted his disease utterly and permanently. The cold-water cure has also been successfully applied to the removal of these headaches of adolescents, but the cure is of much longer duration. The surest process consists in removal from all former surroundings and habits, and in subjection to gross physical labor. Military service is, in my judgment, pre-eminently helpful. I would remark that I have seldom or never met this disease among children of the working classes.

Sore Nipples.—Dr. Oehren recommends ichthyol in the treatment of sore nipples, according to the following formula:

℞.	Ichthyol	1 drachm.
	Lanolin	1½ drachm.
	Glycerin	1½ drachm.
	Olive oil	2½ drachms.

—*Therapeutische Monatshefte.*

Etiology of Intra-uterine Fractures.—A paper upon this subject is published by Sperling. The results attained by his researches may be summarized as follows (*American Journal of the Medical Sciences*, November, 1892): Many cases of alleged intra uterine fractures, especially of the lower extremities, are malformations, and not fractures at all. These defects have, as a rule, nothing to do with a fracture should one be found in addition. Fracture and malformation are not produced by a common and contemporaneous cause; malformations undoubtedly occur in the first and second month of intra-uterine life, and are most rationally referred to amniotic adhesions. Bending and malformation of the extremities in these cases of supposed fracture find their most rational explanation in a precipitate flexion of undifferentiated layers in the embryo; the presence of an apparent scar is not an evidence of fracture. It is exceedingly doubtful if external violence can produce fracture of the fœtal thigh, as the fœtus is so well protected by the amniotic liquid. If intra-uterine force be held to be the cause of such fracture, such can only occur during contractions of the uterus; there is, however, no case clearly proven in which, during the stage of dilatation or of expulsion, uterine contractions alone have caused fracture; the great frequency of births at full term, accompanied by so called intra-uterine fracture, renders the theory that such fractures are caused by the irritation of the uterus in premature birth scarcely probable. In cases of fracture of the fœtal skull following severe injury to the mother's abdomen, rupture of the uterus is usually produced, and this explains the occurrence of the fœtal fracture. In so-called intra-uterine fracture of the thigh it is indisputable that but little callus is present, although the conditions are favorable for a very free development of callus. In fractures of the clavicle, the occurrence of considerable callus is best explained by defect in the development of the clavicle during embryonic life. The conditions of embryonic life account for the small amount of callus in malformations of the inferior extremities. Fractures of the lower extremities with free development of callus show no defect in the fibula or in the toes, such as is observed in cases of lack of development. A microscopic examination in a case of flexion of the bones of the forearm in a new-born child, with thickening of the bones at the point of deformity, but without defect in the fingers, showed the same pathological processes, and no characteristic callus of fracture. The conclusion of Sperling's research is that most of the cases where fractures of the bones of the extremities are supposed to have occurred *in utero* through violence are clearly cases of malformation and defective development.

Presence and Localization of Mercury in the System.—Dr. Ullmann (*International Dermatological Congress Report*) has made an experimental study of the distribution and storing up of mercury in the various organs of the body, and the methods by which it is eliminated. Ludwig's process for determining the presence and quantity of mercury was employed. This consists in adding to the suspected liquid finely powdered oxide of zinc. This precipitates the mercury, which can then be collected and weighed. If an organ is to be tested it is cut into small pieces, treated with a twenty per cent. hydrochloric acid solution, and heated for several hours. The vaporized mercury is collected and condensed in a refrigerating apparatus. Mercury was thus discovered whenever it had been administered, and especially when by the hypodermic method. The greatest quantity was found in the kidneys, liver, spleen, and intestinal canal. The large intestine contained the most and the stomach the least. An interesting point was that in the salivary glands only minute traces of mercury were to be discovered, and, strangely enough, the saliva contained absolutely none. This makes it appear that salivation due to mercury should only be looked upon as a reflex phenomenon. Mercury leaves the system through the bile, still this fluid was found to contain but little. Healthy bones showed scarcely a trace.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE PAN-AMERICAN MEDICAL CONGRESS AND ITS PROSPECTS.

AT a meeting of the American Medical Association, May 5, 1891, the following resolutions were passed:

"*Resolved*, That the American Medical Association hereby extends a cordial invitation to the Medical Profession of the Western Hemisphere to assemble in the United States in an Inter-Continental American Medical Congress.

"That the Committee on Nominations be, and is hereby instructed, to nominate one member for each State and Territory, and one each from the Army, Navy, and Marine Hospital Service, who shall constitute a committee, which is hereby instructed to effect a permanent organization of the proposed Inter-Continental American Medical Congress, and to determine the time and place at which the same shall be held."

Pursuant to this a committee of forty-nine gentlemen was appointed. This Committee effected an organization of the Congress. The President is Dr. William Pepper, with whom there are seventy-three Vice-Presidents, each representing one of the United States, and the different Central and Southern American States, the West Indies, and Canada. The Secretary-General is Dr. Charles A. L. Reed, of Cincinnati, O. There are also nine Assistant Secretaries. The Vice-President for New York is Dr. Seneca D. Powell. The Secretaries are Drs. Ferd. C. Valentine and A. Walter Suiter. The Treasurer is Dr. A. M. Owen, of Evansville, Ind.; the Chairman of the Committee on Arrangements is Dr. Samuel S. Adams, of Washington, D. C. There are six Incorporators, and a Board of Trustees, fifteen in number, of which the New York representative is Dr. George F. Shrady. There are also an Executive Committee of seven, and an International Executive Committee of twenty-two. The Committee on Ways and Means consists of seventy-five gentlemen representing different States. The Congress is to meet in twenty-two sections, each of which has number

lish. The regulations adopted require that "contributors forward abstracts of their papers, not to exceed six hundred words each, to be in the hands of the Secretary-General not later than the tenth of July, 1893. These abstracts will be translated into English, French, Spanish, and Portuguese, and will be published in advance of the meeting for the convenience of the Congress; no paper will be placed upon the programme which has not been thus presented by abstract. Abstracts will be translated by the Literary Bureau of the Congress at the request of contributors Papers to be presented to sections must not consume more than twenty minutes each in reading, and when of greater length must be read by abstract. Papers read by abstract may be printed in full in the Transactions, subject to approval by the Editorial Committee. Papers and discussions will be printed in the language in which they may be presented. All papers read in the Sections must be surrendered to the Secretaries of the Sections, and all addresses read in the General Session must be surrendered to the Secretary-General as soon as read; and all discussions are to be at once reduced to writing by the participants."

It will be seen from the foregoing that a most elaborate scheme of organization has been effected, and one that has already called for a great expenditure of time and executive skill.

The Congress is to be held in Washington rather than Chicago. This, on the whole, will prove satisfactory; for few foreign visitors will wish to leave without seeing the nation's capital.

The scientific and practical results of the Congress will be watched with a great deal of interest. There is no doubt that they will be far-reaching and valuable. It will establish more closely a bond of unity among physicians of this hemisphere and lead to more fruitful efforts. The Southern republics contain good universities and many talented physicians; yet little scientific work has yet been done by them. We shall expect that the stimulus of the Pan-American Congress will lead them to make special efforts. There are many things regarding local maladies, local medicinal agents, and modes of treatment which ought to have a great value and interest to the scientific world. Altogether we apprehend that the Pan-American Congress is going to be the most unique, original, fruitful, and interesting of any medical gathering held for a long time.

VOMITING IN FLOATING KIDNEY.

FLOATING kidney may exist without special symptoms and unfavorable results of any kind. On the other hand, through the severity of pain, the inability to work continuously, the gastric and mental complications, and the disturbances in nutrition that these bring about, life may be materially shortened. The dragging pain predisposes to strange fits of melancholy. There is almost always loss of appetite, frequently associated with attacks of vomiting and cardiac palpitation. The neuralgic pains complained of are always on the affected side, and are at times most excruciating in character.

Vomiting as a symptom in this somewhat rare condition deserves special attention. In the *Mercredi Médical*, October 26, 1892, Mathieu reports the occurrence of

vomiting in seven cases of floating kidney that have come under his observation during the past two years. These attacks may come on suddenly, or occur occasionally, and then gradually increase in frequence and severity. At first far apart, they become more and more frequent, and finally result in a complete gastric intolerance. They are often accompanied by severe gastralgic pains, and are analogous in their clinical expression to tabetic crises. The matter ejected may be alimentary, mucous, or biliary. The vomiting is not preceded by nausea, it is projectile, and frequently terminates an attack of gastralgia. The vomiting may last several days or several weeks. These seven cases of Mathieu's were not hysterical, but were decidedly neurasthenic. Their neurasthenia had been brought about by the irritation due to the abnormal motility of the kidney (traction on the duodenum or peritoneum). Besides the vomiting crises, there was also slight dyspepsia, dating from childhood or adolescence, together with constipation and sometimes pallor, more or less emaciation, and mental depression. Occasional causes of this vomiting were menstruation, overwork, and violent emotion.

Careful search should be made for floating kidney in conditions where vomiting constitutes crises. Otherwise serious errors in diagnosis may occur, for such crises suggest tabes dorsalis, pregnancy, intestinal obstruction, hysteria, and poisoning. Then, too, attacks sufficiently similar may occur in neurotic subjects without nephroptosis, in hysterical states and in uncomplicated neurasthenia.

Renal strangulations may take place when floating kidney exists and cause paroxysmal vomiting, There is sudden sharp pain in the abdomen on a level with the displaced kidney, and repeated vomiting. The pulse is feeble and the face is bathed in cold sweat. These phenomena, which may entirely disappear in a few days, are explicable on the ground of strangulation of the kidney in meshes of the subperitoneal cellular tissue, of the deflection or torsion of the hilum, together with obliteration of the renal vein or of the ureter. But it seems well demonstrated to-day that acute hydronephrosis, often intermittent, due to deflection of the hilum, is in reality the condition present. The urine is much diminished during the crisis. Polyuria follows permeability of the ureter. Complete rest in bed is essential, and gastric sedatives should be given, as the chlorhydrate of cocaine. In regard to food, a milk diet in the beginning, with eggs added later, then roast or broiled meats well-cooked and minced, give the best results. In grave cases where there is emaciation and profound depression, gavage of powdered alkalinized meat is necessary. Medical measures failing, the surgeon's work begins. Nephrorrhaphy is in order, a measure that brings about permanent cure in more than one-half of all cases operated upon.

An interesting discussion followed Mathieu's paper (Société Médicale des Hôpitaux). Guyot affirmed that nearly forty years' close observation of floating kidney had failed to reveal to him one single case in which attacks of vomiting occurred. Debove reported one case under observation in 1891. Similar vomiting had come under his observation in hysterical and neurasthenic subjects, and in persons without any neuropathic manifestation whatever. In January, 1889, he had called the attention of the Society to essential gastric crises. Rendu told of a recent case of his own, in which attacks of vomiting, such as Mathieu had described, made him think of serious stomach trouble. Icterus appearing shortly after, his attention was then called to the liver. After consultation with Potain and Bouilly there was question of cholecystotomy. But a floating kidney was discovered before the date of operation. The adverse symptoms disappeared suddenly, for no definite reason, perhaps owing to the passage of a gall-stone. In this particular case the symptoms first led to the consideration of gastric and hepatic disease, before the discovery of nephroptosis. Here Mathieu remarked that iterus has sometimes been noted in floating kidney and has been considered in these cases to bear some relationship to the displacement.

A NEW DEPARTURE IN PHYSICAL DIAGNOSIS.

THERE are very few months in the year when Dr. Benjamin Ward Richardson cannot contribute something interesting to medical science. These contributions are, at times, rather mystic in nomenclature and occult in character, but they show an ingenious and original mind. Dr. Richardson's last opusculum is "intra-thoracic auscultation." He has found that when an œsophageal tube is introduced into the stomach and the open end attached to a stethoscope, sounds from the stomach, heart, and great vessels can be heard and studied. What he found is best described in his own words:

He says: "I could hear soft friction of the tube against the walls of the œsophagus, and was made quite sure that the friction was uniform throughout, and that there was no special constriction or induration in any portion of the tube. When I passed the tube into the cavity of the stomach itself I obtained a sound new to me, like a gentle seething, as of air or gas agitated in a thickish fluid, and at times a gurgling sound of gas, with another sound probably due to muscular contraction of the stomach itself. . . . I withdrew the tube until the opening on the left side came in contact with that portion of the œsophagus that lies in immediate proximity with the heart. By previous auscultation of the heart over the thoracic wall I had failed to detect clearly the two cardiac sounds owing to the feebleness of the cardiac action, but now both sounds were as distinct as they would have been from a normal heart. They were not, however, the same precisely as the sounds we hear through the thoracic wall; they were duller in character, as if they wanted the resonance which is probably produced by the pleura stretched over the thoracic cavity. At the same time they were loud and were singularly distinct. By moving the tube gently up and down I could get the second sound separately from the first, and *vice versâ*; but when I had the opening of the tube midway so as to compass both sounds there was not so much difference between the first and second sound as is common to that distinguishable in ordinary auscultation. I expected that on withdrawing the tube farther out of the œsophagus it would be possible to hear a loud sibilant or vesicular murmur in respiration. In this I was disappointed to a certain extent. It was impossible to catch a murmur, even on a deep inspiration, so distinct as the murmur heard from the chest-wall outside."

Dr. Richardson hopes, by intra-thoracic auscultation, first, to learn about the condition of the stomach. The healthy organ will give its own peculiar sounds; in cancer or other disease these will be modified. Pulsating abdominal tumors can also be heard. Second, the heart-sounds can be studied from another point of view acoustically. Third, thoracic aneurisms can be heard, and, finally, slight strictures of the œsophagus can be recognized. Possibly, pulmonary sounds can be studied also. The fact is recognized that in some sensitive patients the operation of introducing the tube is impossible and that in others it is dangerous.

THE ANTI-CANCER LEAGUE.

Last March a series of letters were sent to physicians and others, with the object of effecting unity of action in regard to the closer study and ultimate extermination of cancer, the scourge of humanity and the shame of medicine. The result is a new organization of scientific and humanitarian interest, known as the Anti-Cancer League, of which Dr. Verneuil, of Paris, is the moving spirit. Its members are prominent medical men, whose object is to attack this dreadful disease in concert and from all directions. The earnest co-operation is desired of all persons engaged in researches in pathology, biology, microbiology, and in veterinary practice and surgery. Explorers and geographers will be asked to obtain facts pertaining to racial and climatic peculiarities in the distribution of cancer, and careful records are asked of each and every country practitioner who is called upon to minister to those suffering from a most painful affection that is as yet incurable. The League has authority to give prizes and substantial aid whenever deserved to those engaged in investigation and to publish records of work done whenever advance is made in knowledge. To-day the organization is in a flourishing condition. The General Secretary is Dr. Paul Reclus, of Paris. The membership fee has been fixed at about four dollars a year. Sixty dollars secures a life membership. Ship surgeons, army medical men, philanthropists everywhere, and the medical press of every nation are all invited to unite in this good work. There is nothing to prevent every country from following the example of France and establishing an anti-cancer league of its own. Pending such universal philanthropic enterprise the French organization deserves aid and encouragement and general recognition as a powerful factor for good.

THE HEALING WATERS OF JAMAICA.

Many of the cities of Europe, it is well known, derive a large part of their revenues from, and indeed owe their very existence in great measure to, the mineral springs in their neighborhood. Balneology has there been developed into a science, with chairs in the universities and special societies devoted to its teaching and advancement, and with journals established solely to record and further its progress. In this country medical men do not, as a rule, look with so much favor on the therapeutic application of nature's ready-made potions, being prejudiced against them, possibly in consequence of the extravagant claims of cure-all properties put forth by the proprietors of certain much-advertised waters. Yet there are few who will deny the healing virtues of some of our better-known springs, and the practice of sending patients during the summer to one or the other of them for a course of the waters is constantly on the increase. Most of our own spas, however, as well as those of Europe, can be visited during a brief period of the year only, and even in those places that are open the year round there is little to tempt the invalid, who finds himself kept a prisoner by the inclement weather during the greater part of his stay, and thus loses the benefit of two great adjuvants in the treatment, namely, fresh air and sunshine.

These reflections have been suggested by the perusal of an interesting brochure on the "Mineral Springs of Jamaica," by the Hon. J. C. Phillipp, M.D., of Kingston. From this we learn that the island, so singularly favored in its mild and equable climate, holds out to the invalid the additional resource of a number of medicinal springs of undoubted therapeutic value. The exact number of springs in the island is unknown, and even those that are known have never been utilized as they should be. This is possibly owing to the fact that the diseases, for the treatment of which these waters would be suitable, are not common among the natives and residents of Jamaica, and it is only within a comparatively recent period that health seekers from the north have begun to avail themselves of the benefits that a winter stay in this genial climate has to offer them. So little attention, indeed, has been paid to these springs that rough analyses have been made of some four or five of them only, and of these but three have been employed at all systematically in the treatment of disease.

The bath of St. Thomas is perhaps the most remarkable of them all. It is a sulphurated sodio-calcic thermal spring, having a temperature of about 130° F. The water resembles in its constituents those of Eaux-Bonnes and Eaux-Chaudes in the Pyrenees, although warmer than the latter, and is found to be useful in the same class of disorders, namely, chronic rheumatic and arthritic troubles, skin diseases, hepatic disorders, neuralgia, bronchitis, incipient phthisis, etc. Another spring, the Milk River Bath, is a sulphurated, alkaline, thermal water, with a temperature of 92° F., and resembling those of Kreuznach, Homburg, and Wiesbaden, except that it also contains a large proportion of sodium sulphate. This has been found to be especially valuable in the treatment of acute and chronic rheumatism and gout. In addition to these there are also chalybeate and alum springs, which do not differ in any essential respect from others of their class in this country and Europe. They all, however, possess the great advantage of being located in a winterless country, where they can be visited and their therapeutic properties utilized at a season when similar resorts in the north are closed to guests.

Some of these Jamaican springs have been improved to a certain extent in that they are provided with bathing facilities and fair accommodation for visitors; but they have never received the attention that their undoubted value would seem to call for. The island government has from time to time made grants for the improvement of certain of the springs, but much more might be done by private enterprise to popularize them. There would, indeed, appear to be an excellent opening here for one or more experienced balneologists who could analyze

these waters and determine their place among the healing springs of the world. If the claims already made for them by practitioners in the island should be sustained by further study of their properties and therapeutic applications, the springs of Jamaica would deserve to rank among the most celebrated spas of the world.

TRY ANOTHER WAY.

THE persistent "specialist in female complaints" to whom we have already twice referred, continues to annoy the greater part of New York's physicians with his frequent consignments of business cards. Our recent advice to tear them into small fragments so as to prevent their dissemination by way of the ash-can and garbage-dumps has failed of its purpose. We are told that thirty thousand of these cards are printed on a standing order every three weeks. We now advise physicians, in and out of town, who suffer this annoyance, to refuse every such package and let them be returned to the sender through the post-office.

A concerted action of this kind would, we think, soon put a stop to the practice.

News of the Week.

A Course of Biological Lectures at Columbia College.—Four courses of lectures will be given by the Department of Biology, in Room 11, Liberty Building of Columbia College, in this city, on successive Thursday evenings, at eight o'clock, beginning November 10, 1892. They are designed for those who desire to keep abreast of the later advances in biology without entering any of the technical courses. The following courses will be given: "History of the Theory of Evolution," by Henry F. Osborn, Sc.D., Da Costa Professor of Biology; "The Cellular Basis of Heredity and Development," by Edmund B. Wilson, Ph.D., Adjunct Professor of Biology; "The Origin and Evolution of the Fishes," by Bashford Dean, Ph.D., Instructor in Biology; "Amphioxus and other Ancestors of the Vertebrates," by Arthur Willey, B.Sc., Tutor in Biology.

New York Academy of Medicine.—At the Anniversary Meeting held on the 17th of November, the hall of the Academy was filled by an audience composed largely of the general public, the ladies being present in greater numbers, perhaps, than even the gentlemen. The usual business was dispensed with, and the President, Dr. A. L. Loomis, introduced the orator of the evening, Dr. Lewis A. Stimson, who had chosen for his subject, "Pasteur's Life and Work in Relation to the Advance of Medical Science." Even the doctors present, whose practice has been so largely modified by the discoveries of Pasteur in relation to the part played by germs in the production of fermentation and disease, and the correlated fact of prevention by inoculation, were led to a clearer understanding of the chemist's work, and made to feel more deeply their obligations for his pains-taking and conscientious industry.

Some Greek Medical Writings.—Our esteemed and learned contemporary, the *Boston Medical and Surgical Journal*, publishes a review of three medical works published in Greek, and dated at Athens B.C. 400, and A.D. 1892. One consists of medical quotations from Aristophanes, another is a treatise on influenza, the third is a hitherto unpublished work of Ætius (A.D. about 400).

The Growth of Dispensaries is so great that a good deal of business push is now required to keep up the record of "philanthropic" work and make the annual reports read well. The establishment of free public baths, the adornment of the waiting-rooms, the creation of night classes and Sunday classes, are the measures which are becoming popular. The time may come when every patient will receive a free lunch and a chromo.

Treatment of Neuroses with Microbic Ferments.—Dr. Lannois, of Lyons, France, in conjunction with Dr. Kohos, has undertaken some experiments in the treatment of chorea and epilepsy by the injection of microbic products. The ferments obtained from staphylococci and streptococci cultures were used. Some amelioration in symptoms was produced, and the experimenters are encouraged to continue.

The Anglo-American Medical Association.—The first meeting of the Anglo-American Medical Association took place on October 14th, and was very well attended by numerous English and American physicians, who are now in Vienna continuing medical study at the General Hospital in various special branches of medicine. The meetings will now be held more frequently than in former years, and it is intended to arrange lectures from time to time, to keep the members informed of the progress of medicine in their native tongue.

Sentenced to a Fortress.—The sentence of Dr. M. Wiederhold, head of a private hospital at Wilhelmshöe near Kassel, to three months' imprisonment, for whipping one of his lady patients, has been commuted by the Emperor into the much less disgraceful one of three months' confinement in a fortress. This act of grace is said to have been actuated by the circumstance that the convict belongs to the military profession as an assistant doctor of the first class.

The Legality of Bequests to Medical Attendants.—In England one hears occasionally of a professional brother having his grief at the loss of a profitable patient by death attenuated by a more or less important legacy bequeathed him by the deceased. In France such a compensation is, in most cases, out of the question, for, by the terms of Provision 909 of the Civil Code, a practitioner is debarred from inheriting from a patient whom he attended during his last fatal illness, provided the will containing the bequest was made during the said illness. It was, however, ruled by the Court of Cassation in 1834 that the above law did not apply to a doctor called merely in consultation.

Mr. Tait as a "Hero."—At the recent Church Congress in London, "the hero of the meeting," to use the words of the Chairman, "was Mr. Tait, toward whom," said the Rev. Canon, "the antivivisectionists assembled felt a certain sort of hero worship. He was *Athanasius contra mundum*, he was an eminent physiologist, and reckoned the most skilful operator in Europe." To appear as the hero worshipped by gentlemen who have indulged so publicly, so largely, and so frequently in reviling and in calumniating many of the most eminent and esteemed

members of his own profession, and to accept from them their homage as the Athanasius fulminating against the medical world, would not, we apprehend, by most medical men be considered an altogether enviable position. But Mr. Tait repaid his complimenters by tacitly accepting the rôle, and further announcing that he appeared "to offer to the British public an apology on behalf of his profession," and that he did so with a sense of degradation which he could not find words to express. That is a form of denunciation worthy of Athanasius, and one which, coming from an eminent physiologist, will not fail to be adequately appreciated by the profession on whose behalf he volunteers to speak, but, unhappily for that profession, with this inexpressible sense of degradation.

A M. Levy has bequeathed to the French Academy of Medicine a sum of 50,000 francs ($10,000), the interest of which is to be handed over every year to the Pasteur Institute, to be applied in the furtherance of researches on diphtheria. The capital sum will be given as a prize to the discoverer of a genuine cure for that disease.

A Pathological Banquet.—At Rome a congratulatory symposium was given to Signor Adolfo Rossi, correspondent of the *Tribuna*, on his safe return from Hamburg, whither he had been sent to report on the outbreak of cholera. The *menu* was intended to give the guests—some fifty in number—a notion of the dangers Signor Rossi had encountered in the discharge of his commission. Here it is: "Recipe—Bacilli virgola al consommé—Pesci dell' Elba in salsa inquinata—Filetto alla 'Stanhope'—Colture di fagiolini—Polli arrosto uso Koch—Gelato algido—Dessert, frutti e disinfezioni a piacere—Infezioni epidermiche di Chianti—Cantanoclismi di Champagne." ℞. Bacilli-virgulæ al consommé—Elbe fish with river sauce—Filet à la "Stanhope"—"Cultures" of *haricots verts*—Roast chickens à la Koch—Ice *frappé*—Dessert: fruits and *dis*infectionery *ad libitum*—Subcutaneous injections of "Chianti"—Champagne imbibed à la Cantani. "In spite of its alarming bill-of-fare, the banquet received ample justice," says the *Tribuna*, which journal seems to think such pleasantries a not ineffectual way of laughing down the tendency to panic which such epidemics evoke among Italians.

The Medical Profession in Australia.—Doctors are in excess in all new countries and all progressive civilization. In Australia, in 1881, there were 1,595 doctors and druggists. In 1891 the number had increased to 3,474. In 1881 the proportion to the population was 1 to 540; in 1891 it was 1 to 328. That there has been a large increase in druggists and quacks is undoubted, but there has also been an abnormal increase in the number of qualified medical practitioners, so that now the number of doctors in the colony is out of all proportion to the population. Victoria, and in fact all Australia, as a field for medical emigration is played out. The large cities are overrun with medical men out of employment, anxious to grasp at anything that offers.

Treatment of Lupus.—Dr. Robinson, of New York, who had found pyoktanin to be without effect in cancer and lupus (*Journal of Cutaneous and Genito-Urinary Diseases*, September, 1892, p. 365), has conceived the idea that such patients should be fed with the flesh and secretions of animals not liable to tuberculosis, as fish, lobsters, etc., and the flesh and milk of goats, upon the theory that the human protoplasm takes on the molecular constitution and properties, to a large extent, of the protoplasm of the organism upon which it feeds. By this course he believes the soil may be made unfavorable for the existence in it of the bacillus of tuberculosis.

Dr. A. Reeves Jackson, of Chicago, died of apoplexy on November 12th. He was one of the founders of the Woman's Hospital, of Chicago, and of the College of Physicians and Surgeons, of which institution he was president when he died.

Decrease of Insanity in the United States.—The census for 1890 shows that the ratio of insane to sane in this country in 1890 was 1 to 620, as against 1 to 615 in 1880.

The Rivista Médico-Quirurgica is the name of a new Spanish medical monthly published in this city, and intended to be the Spanish organ of the Pan-American Medical Congress. It is edited by Dr. Samuel E. Milliken.

The Largest Private Medical Library in the country is said to be that of Dr. N. Senn; it contains about twenty thousand volumes.

A Medical Act Declared Unconstitutional.—The South Dakota medical practice act has been declared unconstitutional on the ground that its title and its contents conflict.

Inconsistency.—The *Chicago Evening Journal* editorially attacks physicians for careless prescription of morphine. It continues, however, to advertise nostrums containing opium, which are more fertile sources of the habit than prescriptions.—*Medical Standard.*

The Cincinnati College of Medicine and Surgery has secured the addition to its faculty of Dr. E. W. Mitchell and Dr. S. P. Kramer. The former will occupy the chair of Materia Medica, while the latter will lecture on Pathology.

The Clinical Journal is the name of a new weekly published in London by E. Knight.

The Chicago Clinical Review is a new journal issued monthly at Chicago, edited by Drs. George Henry Cleveland and Albert I. Beufflem.

Two New Local Anæsthetics.—The muriate of tropacocaine, or tropsin, is a substance obtained from the Java coca, and said by Professor Schweiger to have a local anæsthetic action resembling that of cocaine. It is weaker in action, but it causes anæsthesia more rapidly. Eugenol-acetamide is recommended as a new anæsthetic. As crystallized from water it occurs in lustrous scales; from alcohol in fine needles; melting at 110° F.

This compound, when applied in the form of a fine powder, produces local anæsthesia, without any caustic action, similar to cocaine. This anæsthetic effect, in connection with the strong antiseptic properties of eugenol-acetic acid, secures a place for this new amide in the treatment of wounds.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, November 14, 1892.

JOSEPH D. BRYANT, M.D., CHAIRMAN.

Congenital Dislocation of Both Hips.—DR. W. W. VAN ARSDALE presented a girl, five years old, who began to walk at two years and a half, showed a waddling gait, which she still had, and which was due to congenital dislocation at both hip joints.

New Instrument for Treating Inguinal Hernia.—DR DALLAS presented the instrument. It was made to push down the inguinal canal through a transverse slit just below the external ring, and when passed down a metallic scabbard was partly withdrawn, exposing numerous fine needle projections on the upper and lower side near the triangular and smooth point—the needles covering a rectangular area measuring about one-third of an inch on its longer side. When the instrument was withdrawn from the canal, these fine projections freshened the upper and lower surfaces, the cord being pushed out of the way, and protected by a groove at one side of the instrument. The transverse slit for entrance was then sealed, a compress was applied, and the canal became obliterated by the adhesion of the freshened surfaces. A truss was worn, at least for some months, as a safeguard. Local anæsthesia with cocaine was used. Recent herniæ could thus be cured; old ones made tolerable. There was no reaction. The method could be applied to femoral herniæ also.

Spasmodic Torticollis.—DR. REGINALD H. SAYRE presented a healthy-appearing young man, whose head was drawn to the left, at nearly a right angle to the body, by spasmodic contractions of the muscles of the neck on that side. The condition began five years before, and had gradually grown worse, although he was not as bad when presented as he had been last spring, when he was unable even to sleep without morphine. At present the head remained quiet during sleep, the squirming movements were not present during swimming, and were only slight when he rode a bicycle. Dr. Sayre proposed to treat him by gelsemium, conium, and similar drugs, put him to bed, and make traction upon the head, and, failing, to resect three or four of the first cervical nerves. The pathology was not clear to him nor to the neurologists who had seen the case. Dr. Keene had reported two, and Dr. Powers one case.

Lesions of the Appendix Vermiformis and Cæcum Demanding Surgical Interference; Report of Recent Cases, with Deductions.—DR. JOHN A. WYETH read a brief paper on this subject, and presented illustrative cases. The anatomical position of the cæcum rendered this part liable to injury. The appendix, having little peristaltic power, fecal or other matter entering it was not likely to be thrown out again. Ulcers might form, perforation might take place, escape of gas or solid contents might ensue, or without perforation inflammation might be set up and involve parts immediately about. Pressure might interfere with nutrition, and lead to breaking down, or a similar effect be caused by pressure from generation of gas by decomposing matter. Pressure was greatest in the sitting posture, which made sedentary occupations more dangerous. A mild catarrhal condition might extend and involve the general peritoneum. Gangrene might develop quickly, in which process pressure might play an important rôle. In the light of the facts named it was easy to account for a slow process in one case, and sudden collapse in another, with intermediate grades.

Catarrhal appendicitis was the simplest and most innocent variety. The symptoms varied with the intensity of the catarrhal process and with its recurrence. Usually the pain was mild, fever not present, tumefaction or local abdominal resistance absent. When the entire wall became involved, and inflammation of the peritoneum commenced, pain and sensitiveness became more prominent. Abdominal resistance showed that there was an adhesive process set up to hedge in the inflammatory exudate or pus. General gangrene of the appendix was the most formidable of all the lesions; death might ensue within a few hours, even before rupture. In local gangrene and ulceration general peritonitis might be prevented by fortunate early adhesions, but usually when perforation took place it was sudden enough to permit escape of gas or contents, and lead rapidly to general peritonitis. Lodgement of foreign particles might produce mild inflammation and adhesion, and at last abscess.

The cases which he related were nine in number, treated during four weeks in September last. Seven were operated upon, one refused an operation, and in the other he declined to interfere because the patient was already in a moribund condition.

Case I., recurrent appendicitis, absorption of the inflammatory product in six attacks; the patient sustained an injury over the cæcum when the seventh attack developed, with formation of a large abscess which opened into the rectum. Dr. Wyeth cut down in the right iliac region and removed pus and the diseased tissues, which was always necessary in order to place the patient in safety for future recovery.

Case II., one of acute appendicitis, acute circumscribed abscess, evacuation by a colleague through a posterior incision, resulting in fecal fistula, recurrence of symptoms; second operation made by Dr. Wyeth by laparotomy, removal of the appendix and abscess-wall; cure. It was safe to say that this patient was now absolutely guaranteed against the dangers of a broken-down appendix, and he thought no other procedure except a radical one should have been employed on the first occasion.

Case III. was the one in which he refused to operate because the man was already moribund when he was called. There was acute perforative appendicitis with foci of suppuration found at autopsy. The mistake in the case was on the part of the general practitioner not being ready to operate at once, instead of delaying to send for a surgeon, for the man's chances of life were lost after the first few hours following perforation. The possibility of adhesive inflammation shutting off the opening was very slight. If the man should recover without operation he would be continually exposed to future attacks.

Case IV. was one of acute gangrene with rupture of the appendix, rapid formation of lymph, only partly shutting off escape of fecal contents; operation; removal of the appendix and abscess-wall; recovery.

Case V. was one of acute gangrene and rupture of the appendix, rapid enclosure of the diseased area by adhesions; removal of diseased structure; recovery. The patient was eight years of age, the operation was done thirty-nine hours after the first pain, yet he found an abscess as large as one's fist.

Case VI. occurred in a girl, aged five, whose attack began some days before he saw her and operated. Her appearance was that of a person suffering from general sepsis. He opened into an abscess, washed it out, put in gauze, and she recovered. The two cases were contrasted: the boy was operated upon at once and a radical cure by removal of the abscess and appendix was effected; in the case of the girl, five days had elapsed with the existence of a large abscess, high fever, great suffering, and greater danger of rupture and death. When the operation was finally done the child was too far gone to stand a radical procedure and the focus of abscess was still present.

Case VII. was one in which the general peritoneum was shut off from the abscess; he opened anteriorly into the peritoneum, could look down and locate the abscess exactly, then cut near the crest of the ilium and evacuated it extra-peritoneally.

Case VIII. was one in which he evacuated the abscess in the iliac region, but made another incision in the median to learn the condition of the peritoneum, and was able to exclude infection of that membrane. The inflammatory process was too far advanced in this case to make radical operation safe. The patient recovered.

Case IX. was one of acute inflammatory appendicitis, but a physician advised against an operation and the patient recovered. It remained to be seen, however, whether the physician or surgeon was the better adviser.

Dr. Wyeth usually employed chloroform anæsthesia, advised opening the peritoneum in the median line either in locating the tumor exactly, or after the extra-peritoneal incision, for the purpose of excluding or detecting sepsis; the appendix and abscess should be extirpated radically if possible; the surrounding cavity was protected during the operation by gauze; he touched the stump of the appendix after removal with a point of bichloride of mercury; the temperature usually was between 100° and 103° F.

Dr B. F. Curtis presented a man whom he saw in his second attack of appendicitis. The appendix was perforated, there were two abscesses, and the cæcum was found when separated from the iliac fossa perforated in two places. Two openings were made into the abdominal walls during the operation. The appendix was removed, the openings in the gut closed, the abdominal wounds healed, and the man had since remained well.

Dr. Curtis also presented a man who had been operated upon outside the hospital, and when he saw him in the hospital he was in an exhausted condition; there were two openings, one leading into an abscess cavity at the cæcal region, the other situated anteriorly, leading into the gut, evidently low down, and discharging fæces. He sewed up the fecal fistula, but it did not entirely heal for a time; he made an opening farther back for drainage of the abscess and closed the existing wound; two abscesses formed in succession below the umbilicus, but finally all the wounds had closed. This patient required first to be built up before operative interference was instituted.

Dr. Curtis thought that in the majority of cases after the tenth day, and even after the third or fourth day, a simple incision into the abscess would be followed by recovery. He would not only limit radical operation, or search for the appendix and its removal, with that of the abscess-walls, to cases in which the patient was in good condition, as Dr. Wyeth had done, but also to cases in which it did not require great interference, with danger of sepsis and peritonitis and a prolonged operation.

The Medical Side.—Dr E G. Janeway said with regard to the propriety of an early operation that if the subject were in good general health and a mass could be easily made out, he would not, at the present time, hesitate about recommending an early operation. But one saw a good many cases which made him hesitate. There were many difficulties surrounding the subject. First, the difficulties of diagnosis, which were considerable. Within a year he had been asked to see cases of appendicitis in which he found, instead, pneumonia, or empyema, or intercostal neuralgia; the pain was referred to the right iliac region. Then there were cases of appendicitis mistaken for something else, because the pain was not in the usual situation, perhaps higher, to be explained possibly by adhesions of the omentum. Renal colic had simulated and been mistaken for appendicitis. One could not be guided by fever, as any pain might cause some elevation of the temperature. Lumbo-abdominal neuralgia had been mistaken for appendicitis and led to operation. He had known a surgeon to cut down for appendicitis and find an ovarian abscess. He had known peritonitis to be found, but no appendicitis or other known cause. Dr. McBurney had suggested as the origin of such obscure cases perforation by a pin. It was difficult, too, to say whether one had a general or local peritonitis, and if general, whether it was septic or simple. There might be local paralysis of the intestine, causing obstruction; opium might have been given and produced paralysis. He knew nothing more difficult under these many conditions than to say whether one should or should not operate. He had known three cases within a year go without operation because their state was too low or they had rejected interference, and all got well. He had known few cases to recover after operation for rapid general peritonitis following perforation. An early operation in selected cases was a judicious and wise measure. If he thought there were not yet sepsis, and the patient's pulse and general state were not favorable, he would caution delay.

Dr. Van Valzah had seen twenty-five recurrent cases but only five in the acute attack, and all recovered without an operation. Perhaps they were mild cases, or were not appendicitis, but cæcitis or perityphlitis, as he was disposed to recognize these different forms. The treatment had been medicinal, usually repeated doses of Epsom salt until free action of the bowel took place, antifebrine or antipyrine if fever were present, opium if great pain, no food, or only one feeding in the twenty-four hours, perfect quiet, thorough "splinting" of the seat of inflammation. To prevent recurrence, he gave the patients such food as they could appropriate, strengthened the nerves, avoided constipation, perhaps applied electricity locally to the muscles.

Dr. F. A. Castle exhibited an enlarged diagram from a small, almost unknown, but valuable book of H. R. Sylvester, in which he sought to prove that the alimentary tract was homologous except at the small intestine, the only remains of the right half here being the appendix vermiformis; the symmetry was resumed at the cæcum.

Dr. Fowler, of Brooklyn, had operated in 150 cases for appendicitis, and expressed the view that Dr. Janeway must have had so much difficulty in diagnosis because opium or other drugs had been given before he saw the cases.

Dr. Janeway interrupted him to say that he had only mentioned the diagnosis which had been made before he was called.

Dr. Fowler thought the diagnosis, as a rule, was not difficult. Perityphlitis and cæcitis meant in reality appendicitis. It was true the pain might be located in an unusual situation. In three of his cases it was on the left side. In five cases he had opened the abdomen in search of appendicitis and found some other condition: in one pyosalpinx, in two a neoplasm, in one ruptured gall-bladder, in one obstruction of the intestine. In all of these the pain was over the cæcum. Gangrenous ulceration of the appendix was liable to invade the iliac vessels. He did not think it good policy where there was a large abscess to make prolonged search for the appendix.

Dr. Willy Meyer believed in operating early. The past summer he had been called to operate in a case, but the symptoms were then mild, and he told the physician he would wait, but hold himself in readiness in case the symptoms should become worse. He was sent for only about two days later, operated, but it was too late, and the man died. He referred also to a case in which renal colic was mistaken for appendicitis.

Dr. Lewis emphasized the possibility of the appendix being well back in the abdominal cavity.

The Chairman mentioned the location of the appendix found at autopsies at Bellevue. The facts would appear in a paper soon.

Dr. Wyeth said, in closing, that he also thought cases should be selected with care, but usually for operation. If all of a thousand suspected cases were operated upon the mortality would be probably fifty per cent. less than in another thousand cases which physicians now would let pass without an operation.

Probes and Probing.—Dr. John H. Girdner, in a paper with this title, showed the reasons for failure with ordinary probes, and then described and demonstrated

the advantages of the telephonic probe. The Bell Telephone Company had at last given a firm permission to manufacture it for use by the profession. No battery was required. The instrument consisted of a telephone receiver; to this two wires were attached, about three feet long; at the other end of one wire was an aluminium bulb which the patient held in his buccal cavity; to the other wire the probe was attached, composed of aluminium, steel, or other metal different from the bullet or metal of whatever kind being probed for. As soon as this was touched by the probe a click was heard. Esmarch had pronounced the instrument an ideal one, and it had been introduced throughout the German army.

Dr. Fowler said he had used the telephonic probe with much satisfaction, connecting it with the ordinary telephone receiver in his office An officer wounded at Bull Run had had the bullet extracted from his arm, yet a sinus had continued for years and could not be healed, and surgeons had been unable to find any foreign obstacle. The telephonic probe revealed at once a piece of tin, which he took out, and the arm was soon perfectly well.

PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, November 4, 1892.

Charles L. Dana, M D., President, in the Chair.

Thiersch's Skin-Grafting for Webbed Fingers.—Dr. Robert Abbe presented a child, aged a year and a half, all of whose fingers of the right hand were webbed together so that it presented the appearance of a mitten, the fingers also being congenitally lacking in one phalanx. The case was specially interesting as illustrating the successful application of skin-grafting to the correction of this congenital deformity. A clean incision separated each finger from its neighbor, and a long skin-graft was applied continuously to the raw surface down one side and up the other in each cleft. On account of the inability of satisfactorily dressing so small a child's hand every day without disturbing the grafts, Dr. Abbe applied a plaster-dressing to the entire hand and forearm, and even above the elbow, thus immobilizing the fingers. The skin-grafts were untouched for two entire weeks; at the end of that time the raw surfaces were found absolutely healed by the grafts, without a point of granulation.

Partial Laryngectomy for Extensive Carcinoma.—The second case presented by Dr. Abbe illustrated most excellent results from the almost complete removal of the larynx for extensive carcinoma. The patient was a man, forty-five years of age; had been treated more than a year before by Dr. French, of Brooklyn, for papillomatous vocal chord; subsequently came under the care of Dr. Rice, of this city, who found extensive carcinoma involving more than half the interior of the larynx, and a few days before the operation the patient was referred to Dr. Abbe for acute obstruction with œdema above the cancer. Being in otherwise good condition, tracheotomy and laryngotomy were combined, the entire thyroid cartilage, except the posterior third of the right ala, was removed, together with all the larynx, except a strip of the posterior wall, one-half inch in width, continuous with the bronchial mucous membrane. Part of the cricoid cartilage was invaded, and also removed. The wound was packed lightly with iodoform gauze; the patient, fed for ten days by soft catheter, made an uninterrupted recovery, and ate solid food at the end of two weeks without its falling into the larynx. An attempt had been made to use a Gussenbauer artificial larynx, but the patient was unable to wear it on account of pharyngeal irritation and nausea. Moreover, it was found that with a large tracheotomy tube, which he now wears, he can, by closing the front with his finger, articulate well, though with hoarse guttural sounds, so as to be heard distinctly by an audience of a hundred.

Dr. Andrew H. Smith remarked that the case of laryngectomy showed the best result he had ever seen, and illustrated how the speaking apparatus can adapt itself so as to give distinct phonation with even imperfect sound.

Regarding the skin-graft case, The President said that webbed fingers were thought by recent observers to be a sign of a degenerative type of individuals, but that he had not been able to find corroborative proof. Other members were unable to recall any association of defective intellect or body with this deformity.

Central Glioma of the Cord, with Hemorrhage Within.—The President presented two specimen cords. The first was a case of central glioma and hemorrhage within. The case was of historic value. He had seen the patient (he was a man, aged forty-five) two years before, with a history of spinal trouble supposed to be transverse myelitis. The man partly recovered from pain in his legs. He had exaggerated reflexes and other signs of transverse myelitis. He left the hospital and returned about two weeks ago with a history of agonizing pain around his body, paraplegia, anæsthesia, atony of the bladder, but no fever. He died exhausted by his pain. The autopsy revealed in the middle part of the cord a fusiform enlargement, which was found filled with clot running up and down the cornua for four or five inches in one horn.

The dura, externally, and pia were normal. The fusiform enlargement extended for three inches. The history seemed to show a repetition of the former condition of the pain. The diagnosis was originally probably glioma, with hemorrhage and enlargement; secondarily, a repetition of the hemorrhage, and death. It was unusual, because hemorrhage of the cord was regarded ordinarily as not painful.

Locomotor Ataxia; Specimen.—The second specimen presented by The President was a marked illustration of the spinal cord in the third stage of locomotor ataxia—a man, aged forty-six, eleven years ill, and in the third stage three years before death. He presented a characteristic picture of a man with locomotor ataxia and crisis.

Dr. Beverley Robinson asked if neurologists had given up the stretching treatment.

The President said he still used it occasionally, but in old cases. The patients thought that the bladder was better, and that they walked better for a while, and the treatment was repeated every few weeks or months. Some cases had shown remarkable relief undoubtedly. He only used it in late second stage. It was still used at the Salpetrière (Charcot), but it had been given up in London, Berlin, and Washington. Modifications of the French method were worthless.

Food In Fevers; Is it not Unnecessary that it be Restricted to Fluids?—Dr. George L. Peabody opened the discussion (see p. 620).

Dr. Andrew H. Smith thought we had prolonged typhoid fever cases at times by too gentle a diet. He recalled cases of typhoid kept on a very low diet that were restored by more liberal food in three days. He recalled the case of a woman who had prolonged convalescence, with persistent low typhoid for three weeks, whom the doctor had ordered to be fed, but whose husband had taken outside counsel of friends on Wall Street not to give solid food too soon, and the consequence was prolonged convalescence. Dr. Smith did not think we discriminated with regard to food sufficiently; that is, we gave irritating and fermenting food. We all had also a nameless dread of harsh food scraping the ulcerated surface, whereas there was hardly any food that we could give that would have that degree of solidity that would produce much harshness when it reached the ulcers in the bowels. He endorsed Dr. Peabody's statement of the raw milk curds being irritating, and he had seen the rectum packed with the remains of milk-curds. Dr. Musser, of Philadelphia, had called attention, in a recent number of the *Journal of the American Medical Sciences*, to prolonged types of typhoid convalescence from poor feeding. Dr. Smith advised the cautious use of more food. The large quantity of milk used to get a good amount of nutrition

diluted the digestive juices to such an extent that they were inferior solvents.

Dr. Beverley Robinson recalled two cases of typhoid with hemorrhage in which he had examined the stools and found the milk-curds—one where non-peptonized milk was used and the curds were large; the second where peptonized milk had been used, the curd particles being small. He thought bouillon, beaten egg, and wine-jelly should be freely used. Milk, he thought, was not good because of the curds. We should be guided by the patient's feeling of hunger. Stress should be laid on the removal of excreta from the bowels, and this was quite as important as the question of food.

Dr. J. West Roosevelt thought a prolonged milk diet prolonged the fever. Records of cases of typhoid, running say four weeks, were apt to show a changing type of continued fever; then, when such cases had the fluid diet stopped and were given stale bread and fine meat, the temperature dropped and convalescence set in. He never could understand why we feared small solid food effects on ulcers. An important observation of Fothergill's was recalled, that we were apt to get our prolonged fever cases in a final scorbutic state. A hungry patient, was, as it were, in pain. If we relieved his pain, we checked his fever. Speaking of some patients not bearing milk well, Dr. Roosevelt had lately a striking case in which cow's milk acted as a poison. This baby had been brought up on fruits, cereals, etc.

Dr. Abbe endorsed the disposition to increase the food in low fevers, according to the toleration of the stomach. He had found, besides the usual peptonized milk, four articles that had served him well—chocolate, scraped meat, baked potatoes, and junket. He did not believe that any of these, after leaving the stomach, could be accused of irritating ulcers of typhoid fever.

Dr Bacon, of New Haven, present by invitation, wished to add his endorsement to Dr. Peabody's ideas. In the treatment of fever he believed the use of solid food was well illustrated in the case of yellow fever, with which he had a large experience. He had found it often not possible to get milk in hot climates, and he believed we had no more right to disregard the patient's appetite in yellow fever than in phthisis, so also in typhoid. Comparing the typhoid patients he had kept on a milk diet strictly with those whose food had been reasonably varied, he had been struck with the better general condition of the latter class.

Dr. William M. Polk referred to the former habit of preparing patients for abdominal operations by keeping them on milk for forty-eight hours, and then for ten days afterward, and the results were often disastrous. The results formerly attributed to shock and sepsis he believed to have been due sometimes to starvation. Now, in a varied diet he rarely saw such cases of exhaustion as formerly were common in grave surgical operations. Now solid food was given to those who had an appetite for it.

The President said that most of us did not give solid food for fear of causing irritation and hemorrhage, or perforation. He would like to ask Dr. Peabody whether he had had experience bearing on this subject. It was affirmed also in typhoid that a drop of blood contained more corpuscles than in health, and in convalescence there was a less number of corpuscles; in other words, patients suffered from lack of water, and it was supposed that a constant fluid diet was therefore desirable.

Dr. Peabody, in answer, said that Dr. Henry, of Philadelphia, had affirmed that there was a deficient amount of water in the system, illustrated by the relatively larger number of corpuscles in a drop of blood, and that hence an abundant fluid diet should be given. As to hemorrhage or perforation from injudicious feeding, he thought we were still in the dark.

Orchitis is mentioned by an English writer as one of the manifestations of influenza.

Correspondence.

LEPROSY AND SYPHILIS.

To the Editor of the Medical Record.

Sir: An article in the Medical Record of September 10, 1892, on "The Etiology of Leprosy," by Dr. George L. Fitch, of San Francisco, challenges criticism by reason of his identification of this disease with syphilis. He regards it as "a fourth stage of syphilis, which stage occurs epidemically in races virgin to syphilis, or sporadically in persons whose systems have reverted to a condition virgin to the disease, and occurring also in those presenting a distinct neurotic taint, and whose habits have been such—in regard to food-supply and manner of living—as would, without the before-stated conditions, produce ordinary scrofula."

My purpose here is to give some reasons why this theory is untenable.

The only argument adduced in its favor is the occasional sequence of syphilis by leprosy in the same person, and especially the extraordinary ravages of leprosy among the aborigines of the Hawaiian Islands, together with the general prevalence of syphilis, both appearing since the discovery of the islands in 1778.

It is to be observed that Dr. Fitch strenuously denies the contagiousness of leprosy, even by its inoculation; but he does not attempt to explain how or why syphilis lost this eminent property of contagiousness between the third and fourth stages, for it is known to be communicable in every stage generally included under this name. He does not deny the strong hereditary tendency of syphilis, nor explain why this property is nearly or totally lost in the stage of leprosy.

It is of general acceptance, Dr. Fitch being no exception, that a syphilitic subject is not capable of a new infection of the disease. His own failures to inoculate syphilis on Hawaiian lepers is to be explained by their being already syphilitic, in common with the majority of their countrymen. On the other hand, Dr. M. Hagan, who has resided on those islands, declares: "It has been settled beyond dispute that a leper will contract syphilis and recover from it with proper treatment, while the original disease goes on and ends in death." Dr. Robson Roose ("Leprosy and its Prevention," p.76), remarks that lepers not unfrequently contract syphilis. Kaposi, in 1889, reported a man afflicted at the same time with syphilis and leprosy, the initial appearance of leprosy antedating that of syphilis.

Antisyphilitic remedies have no control of leprosy; on the contrary, mercury and potassium iodide have been found injurious. At the same time the remedies which have gained some credit in the treatment of leprosy are totally inert in syphilis.

It is a well-known historical fact that syphilis, as a constitutional disease, was as much a stranger to Europe in 1490 as cholera was in 1825. The ravages of syphilis in Europe during the first half of the sixteenth century were a true counterpart to those of the same disease in the Hawaiian Islands three hundred years later; but mark the distinction. Leprosy, one of the oldest diseases known, was declining throughout Europe when syphilis made its appearance, and it has never revived since. It has survived in many localities—notably so in Western Norway, where syphilis has been less prevalent than in Southern Europe.

The bacillus leprae is now generally recognized by pathologists as peculiar to leprosy and inseparable from it. It has never been found in syphilitic growths, though several micrococci have been observed and gained more or less credit as factors in causation.

To my mind these considerations greatly outweigh the sole argument of Dr. Fitch. Indeed, a single example of syphilis following leprosy in the same individual destroys his theory.

H. S. Orme, M.D.

175 North Spring Street,
Los Angeles, Cal.

DIGITALIS IN KIDNEY DISEASE.

To the Editor of the Medical Record.

Sir: I was not a little surprised to read in the Record of November 5th a short article on "Digitalis in Kidney Disease," "Huchard has recently advanced the idea that digitalis, even in large doses, is not hurtful in affections of the kidney," etc.

Ever since I have known anything of medicine I have so used digitalis, and I believe with marked benefit to patients. My authority for so using it was Professor A. L. Loomis. Dr. Huchard need not have brought the matter forward now as anything new if he had read "Diseases of the Respiratory Organs, Heart, and Kidneys," by Professor A. L. Loomis. Neither do I see anything new as to the manner of administering the drug, since large doses are specified both in the book I mention, published in 1875, and in this recent article.

Yours respectfully,

W. Washburn, M.D.

42 Irving Place.

MERCURY IN CHOLERA.

To the Editor of the Medical Record.

Sir: With reference to the statement by Dr. Vanderpoel of his success in the treatment of cholera with calomel and camphor in 1832, reported in the issue of the Medical Record for October 22, 1892, I recall an also held that it was un[illegible]M.D. of Concordia, La., which sions to which this article gave rise lasted an entire year, and then the majority of the members of the Academy, while unwilling to condemn M. Villemin, yet refused to accept his views concerning the unity and the contagiousness of tuberculosis. He had the privilege, which is not accorded to every man, of living to witness his own triumph.

Swallowed a Tooth.—A writer in the *Deutsche Monatschrift für Zahnheilkunde* reports the case of a domestic who, while taking a drink of water, swallowed a false tooth which had been held in position by a metal plate. All efforts to extract the tooth failed, and the woman died of hemorrhage a few days later. At the autopsy it was found that the plate had caused a perforation of the œsophagus just above the entrance to the stomach.

Dr. Dabbs, Tennyson's physician during his last illness, is a dramatic writer as well as physician. He has written several plays, which are said to possess considerable merit, and has also written some very good poetry.

A New Street Danger.—The improvement in the paving of New York streets has given a great impetus to bicycling in this city, and has at the same time added to the dangers which pedestrians have to face in crossing the streets at night. People are knocked down by the silent wheel daily, and recently a noted lady violinist was thrown down and barely escaped a fracture of her arm. We have no wish to repress bicycling, but it should be regulated in some way and made less of a menace to life and limb.

Germ-free Water.—Drs. V. and A. Babes have made a number of experiments to determine the best method of purifying water for drinking purposes (*Centralblatt für Bacteriologie*, July 30, 1892). Filtration, they claim, is not only useless as far as removing the micro-organisms is concerned, but actually favors bacterial growth. Alum has been found by them the best, not only for clarifying water, but also for purifying it. Powdered alum is added to water, which is then well shaken and allowed to stand twenty-four hours in a cool place. At the end of this time the water is not only clear but quite free from germs. The addition of alum in large quantity is harmful since it leads to digestive disturbances. About ten grains to the gallon is amply sufficient to accomplish the desired end. After four or five days' use the vessel is emptied, washed out with sterilized water, and refilled.

appearance there on February 23d. It assumed a very grave character from its commencement, almost every case proving fatal, notwithstanding that every plan of treatment was resorted to. I have tried," he adds, "the prophylactic powers of mercurial salivation in a few cases; these were not attacked by cholera."

A paper had appeared in the *New Orleans Medical Journal* for November, 1849, in which reference is made to a number of negroes who had been "intemperately salivated" previously for some chronic intestinal affection; these escaped attacks, though numerous others were seized and died.

The correspondent continues: "My plan is, as soon as cholera appears among the people, to salivate them and keep them under the gentle influence of the medicine as long as the disease continues. This time," he says, "does not extend beyond two or three weeks."

This is a severe expedient, but the several relations go to show that mercury may be an efficient remedy in cholera, and it very probably acts by destroying the germs, as well as by its modifying influence upon the viscera involved. If this be true, it is only an additional proof of the utility of mercury in the initial stages of many diseases affecting the intestinal canal, as well as in others involving the general system.

F. Peyre Porcher, M.D.

"DOES SHE DO IT?"

To the Editor of the Medical Record.

Sir: The answer to a query in the Medical Record of recent date was, I think, given in the admirable paper on "Typhoid Fever in Chicago," published by Professor Sedgwick and Mr. Allen Hagen in the *Journal of Engineering News*, April 21, 1892. The reported death-rate of 17 per 1,000 is very decidedly misleading, and does not at all suggest the existence of a serious epidemic of typhoid fever which is now prevailing in that great city. Neither does the death rate of Chicago give the faintest suggestion that hundreds who toil in that unhealthy city sicken and die at their homes in the many towns within an hour or two railway distance from their places of employment. Besides all this, thousands are continually passing through Chicago and drink the foul and deadly water of the lake in railway cars, hotels, and restaurants, and are taken sick when hundreds of miles distant from the source of the infection.

A city with wooden pavements, very much neglected and ready to increase the insanitary condition of the city in an alarming extent, with a poisonous water supply, with foul odors from the immense slaughter-houses, with the air filled with smoke from the great chimneys, with the worst milk supply of any American city, with poor and expensive food supplies, and with a life of "hustling" for an existence, it is very unreasonable to assert that the 17 in 1,000 gives any truthful estimate of the death-rate caused by residence, whether transient or permanent, in Chicago.

It seems to be the opinion of very many that the truth should be concealed, lest any fears might be created which would act injuriously upon the success of the World's Fair. This is an astonishing position for hygienists to be willing to occupy.

The whole truth, and nothing but the truth, is what the public have a right to expect.

Professor Sedgwick's paper throws valuable light on this subject, and is a truthful exposition of sanitary, or whether insanitary, conditions obtaining in Chicago to-day.

W. Thornton Parker, M.D.

Beverly, Mass., November 20, 1892.

An Early Sanitarian.—Cyrus was a wise leader, and, it would seem, pretty sound also on health matters. It is reported of him, when crossing the Choaspes, that he had all the water used for drinking purposes first boiled in silver bowls.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending November 19, 1892.

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	37	7
Scarlet fever	83	10
Cerebro-spinal meningitis	0	3
Measles	49	7
Diphtheria	97	30
Small-pox	6	0
Cholera	0	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0

A Bust of Dr. Guillotin is to be erected at Versailles. In the paragraph in which this is announced it is carefully explained that this memorial is not erected for the invention of the guillotine, nor because the doctor was Professor of Anatomy, Pathology, and Physiology at the Faculty of Medicine of Paris, was a *savant* of high reputation, a philosopher, a reformer, and a good man in every acceptation of the term—not on account of all these virtues, but because he moved the resolution that the *tiers-état* when expelled from the hall of the States-General, should hold their meeting in the tennis-court.—*Provincial Medical Journal.*

Running Through Many Editions.—*The Medical Press* is responsible for the statement that a certain medical author, in order to insure success in the eyes of the uninitiated, printed one thousand copies of a book, of each fifty of which he had a different "edition" printed so that by the time the last fifty were drawn upon the book had reached its twentieth edition.

The City of Dublin Hospital having proved inadequate to accommodate the numerous applicants, the Board have determined to erect a structure which will about double the present accommodation. An excellent design has been selected and estimates made, showing that a hospital according to the plans adopted may be constructed at a cost of from £9,000 to £10,000.

To Prevent the Spread of Infection.—The city authorities of Detroit have passed the following ordinance to prevent the spread of infectious diseases. The English is a little difficult, but there seems to be some sense in the ordinance. "Every physician having a small pox, variloid, typhus fever, Asiatic cholera, glanders, erysipelas, diphtheria, scarlet fever patient, or any other contagious disease, dangerous to the public health, during each and every visit to the same, shall exercise all the precaution known to the profession. Every undertaker having in charge the body of any person who has died of either of the above-mentioned diseases shall, during the time he is preparing such body for burial, wear a long rubber overcoat buttoned to the chin, and after he has properly prepared the body, shall spray his hair, beard, hands, and boots, especially the soles, with disinfectant cologne, and shall wear his rubber coat when carrying and or arranging said coffin or casket during the funeral. After said funeral the undertaker shall spray his hair, beard, hands boots or shoes and rubber coat with said disinfecting cologne before returning home or walking the public streets. Any person nursing or taking care of any person sick with either of said diseases shall, before going upon the street or visiting any other house, take a warm bath, and disinfect the hair of the head, the hands, the finger-nails, by means of the above-mentioned spray, changing all underclothing and clothing which had been worn while in attendance on the patient, and see that the former underclothing and clothing are thoroughly disinfected by either sulphur, boiling in water, steam or spraying with disinfectant cologne, and allowed to dry, and shall not attend any non-contagious disease without a permit from the health officer. Every clergyman conducting burial service over the body of any person dying of either of said diseases shall observe the regulations given above for physicians."

Yellow Fever at Santos.—Reports from Santos, Brazil, to a Philadelphia merchant, reveal a sad story of yellow fever at that important seaport in South America. An epidemic has been raging there for months, and the dead have been piled in trenches of great length. It is claimed that more victims have been swept away in and around Santos than have died in Central Europe from the cholera. Three hundred and forty-seven vessels are awaiting their turn to discharge valuable cargoes shipped from all parts of the world, and it is claimed they will be there a year hence, still waiting to be towed alongside the discharge berth.—*Philadelphia Record.*

The Residence of the Late Sir Morell Mackenzie, in Harley Street, is still advertised for sale. It was thought that the house would be snapped up immediately it came into the market by some enterprising throat-specialist, but throat specialism is rather at a discount just now, the novelty of the usual throat medicaments having worn off. —*Hospital Gazette.*

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property or contagiousness between the third and fourth stages, for it is known to be communicable in every stage generally included under this name. He does not deny the strong hereditary tendency of syphilis, nor explain why this property is nearly or totally lost in the stage of leprosy.

It is of general acceptance, Dr. Fitch being no exception, that a syphilitic subject is not capable of a new infection of the disease. His own failures to inoculate syphilis on Hawaiian lepers is to be explained by their being already syphilitic, in common with the majority of their countrymen. On the other hand, Dr. M. Hagan, who has resided on those islands, declares: "It has been settled beyond dispute that a leper will contract syphilis and recover from it with proper treatment, while the original disease goes on and ends in death." Dr. Robson Roose ("Leprosy and its Prevention," p. 76), remarks that lepers not unfrequently contract syphilis. Kaposi, in 1889, reported a man afflicted at the same time with syphilis and leprosy, the initial appearance of leprosy antedating that of syphilis.

Antisyphilitic remedies have no control of leprosy; on the contrary, mercury and potassium iodide have been found injurious. At the same time the remedies which have gained some credit in the treatment of leprosy are totally inert in syphilis.

It is a well-known historical fact that syphilis, as a constitutional disease, was as much a stranger to Europe in 1490 as cholera was in 1825. The ravages of syphilis in Europe during the first half of the sixteenth century were a true counterpart to those of the same disease in the Hawaiian Islands three hundred years later; but mark the distinction. Leprosy, one of the oldest diseases known, was declining throughout Europe when syphilis made its appearance, and it has never revived since. It has survived in many localities—notably so in Western Norway, where syphilis has been less prevalent than in Southern Europe.

The bacillus lepræ is now generally recognized by pathologists as peculiar to leprosy and inseparable from it. It has never been found in syphilitic growths, though several micrococci have been observed and gained more or less credit as factors in causation.

To my mind these considerations greatly outweigh the sole argument of Dr. Fitch. Indeed, a single example of syphilis following leprosy in the same individual destroys his theory.

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screwed down we may hope that the alcohol will boil at 79° or 80° ., and that not more than one-fifth its volume will evaporate in an hour's boiling. Such a result will usually follow, but we cannot depend upon its doing so. On the one hand, the leakage may be more than this; on the other, the jar may be so tightly sealed as to allow the alcohol to rise to 90° or 95° C., and the gut is rendered useless by an hour's exposure to this temperature. It is far better to boil the alcohol under ordinary atmospheric pressure and then recondense it. Thi gives a [illegible], of Buda-Pesth, ...es in the *Centralblatt für klinische Medicin* of October 22, 1892, concerning his experience with pilocarpine for the relief of singultus. He gives the hydrochlorate in doses of ten drops of a one per cent. solution three or four times a day in cases of nervous hiccough. The same effect, though in less marked degree, is obtained by atropine in large doses. Possibly quicker results might be obtained with pilocarpine used hypodermically, but the author does not seem to look with special favor upon this mode of application.

M. Villemin, whose death occurred in Paris on October 6th, was Vice-President of the Academy of Medicine of that city. He startled the Academy in 1865 by a communication in which he maintained that what we now recognize as the various manifestations of tuberculosis were but different forms of one and the same disease, modified according to the particular tissue involved. He also held that it was an infectious disease. The discussions to which this article gave rise lasted an entire year, and then the majority of the members of the Academy, while unwilling to condemn M. Villemin, yet refused to accept his views concerning the unity and the contagiousness of tuberculosis. He had the privilege, which is not accorded to every man, of living to witness his own triumph.

Swallowed a Tooth.—A writer in the *Deutsche Monatschrift für Zahnheilkunde* reports the case of a domestic who, while taking a drink of water, swallowed a false tooth which had been held in position by a metal plate. All efforts to extract the tooth failed, and the woman died of hemorrhage a few days later. At the autopsy it was found that the plate had caused a perforation of the œsophagus just above the entrance to the stomach.

Dr. Dabbs, Tennyson's physician during his last illness, is a dramatic writer as well as physician. He has written several plays, which are said to possess considerable merit, and has also written some very good poetry.

A New Street Danger.—The improvement in the paving of New York streets has given a great impetus to bicycling in this city, and has at the same time added to the dangers which pedestrians have to face in crossing the streets at night. People are knocked down by the silent wheel daily, and recently a noted lady violinist was thrown down and barely escaped a fracture of her arm. We have no wish to repress bicycling, but it should be regulated in some way and made less of a menace to life and limb.

Germ-free Water.—Drs. V. and A. Babes have made a number of experiments to determine the best method of purifying water for drinking purposes (*Centralblatt für Bacteriologie*, July 30, 1892). Filtration, they claim, is not only useless as far as removing the micro-organisms is concerned, but actually favors bacterial growth. Alum has been found by them the best, not only for clarifying water, but also for purifying it. Powdered alum is added to water, which is then well shaken and allowed to stand twenty-four hours in a cool place. At the end of this time the water is not only clear but quite free from germs. The addition of alum in large quantity is harmful since it leads to digestive disturbances. About ten grains to the gallon is amply sufficient to accomplish the desired end. After four or five days' use the vessel is emptied, washed out with sterilized water, and refilled. Water can also be rendered free from germs by the addition of sulphate of iron or of chalk-powder and sulphuric acid; in the latter case carbonic acid is given off.

Washing Out the Stomach.—Dr. Fenwick is not an enthusiastic admirer of indiscriminate lavage of the stomach. In an article in *The Practitioner* some time ago he showed that attacks of convulsions and tetany, as well as syncope and sudden death, have followed resort to this measure. There are also cases on record in which fatal poisoning has been caused by antiseptic materials used for washing the stomach.

"**Yujno-Russkaya Meditsinskaya Gazeta**" is the name of a new weekly medical journal published in Odessa, the first number of which is dated October 1, 1892. It is the official organ of the Odessa Medical Society. The "South-Russian Medical Gazette" is what the title means in English.

Bleeding from the Skin.—Dr. Deryabin reports the case of an apparently healthy girl, eighteen years of age, who suffered from profuse hemorrhage from the skin of the forearms, ends of the fingers, and tip of the nose. The hemorrhage lasted for about four hours, and the amount of blood lost was so great as to endanger life and to give rise to marked symptoms of acute anæmia. There was no cause appreciable for the attack, and the skin from which the bleeding occurred showed no lesions whatever, save that there was a patent orifice of a cutaneous gland visible at the tip of the nose.—*Vratch*, No. 31, 1892.

Gout in a Child.—Dr. Marboux reports in the *Lyon Médical*, for October, 23, 1892, a typical case of gout occurring in a girl, eleven years of age. The mother of the child was healthy, and the father had suffered only once from a slight attack of gout nine years before the child was born.

The Insanitary Condition of Rouen.—The Paris correspondent of *The Lancet* writes, anent the occurrence of cholera in Rouen, the following: "To sum up, at Rouen only one house out of five—3,000 out of 15,000 houses—has a supply of wholesome drinking-water; only one cesspool out of three cesspools has any pretence to be water-tight; more than 10,000 cesspools allow their foul liquid contents to escape in the sub-soil; out of 162 kilometres of streets only 42 kilometres of streets have sewers. Many of the streets are devoid of sunlight. The sewers—the surface drainage—poison the confined atmosphere. What wonder that the infant mortality is the highest in France, and that the general mortality reaches the alarming figure of 35.32 per 1,000 of the population. What wonder that typhoid fever is endemic, that diarrhœa has assumed an epidemical intensity, and that cholera has found in Rouen ready victims. May the mischief go no further, and may the warning be taken in time. Good water is available, good drainage is possible; both should be at once secured."

Vis Medicatrix Naturæ.—The *Hospital Gazette* has picked up the following legend somewhere, and publishes it without comment: "It is stated that a miser, named Elwes, when both his feet were equally injured by an accident, consulted a surgeon, who began to expatiate on the severe character of the wound and on the good fortune of his having been sent for. On this Mr. Elwes said, 'Now, Mr. Sawbones, I have one thing to say to you. I do not consider myself much hurt, whereas you think I am, so I will make this agreement; I will take one leg and you shall have the other; you shall do what you please with yours, and I will do nothing to mine, and I will wager you the amount of your bill that my leg gets well first.' Elwes delighted in telling this story, and used to assert with triumphant glee that he 'beat the apothecary by a fortnight.'"

A Restricted Diet.—A correspondent sends the following anecdote to the *Medical Press*: "Sir Richard ——, being called to a patient who fancied himself very

ill, told him ingenuously what he thought, and declined prescribing, thinking it unnecessary. 'Now, you are here,' said the patient, 'I shall be obliged to you, Sir Richard, if you will tell me how I must live—what I may eat, and what not.' 'My directions as to that point,' said Sir Richard, who abominated this sort of question, 'will be few and simple; you must not eat the poker, shovel, or tongs, for they are hard of digestion; nor the bellows, because they are windy; but anything else you please.'"

Typhoid Fever at Nice.—Continental authorities rejoice, says the *Medical Press*, in special and peculiar facilities for keeping secret the occurrence of local outbreaks of disease, and curiously enough the first intimation of its existence is often given in the columns of the English daily press. According to Dr. Allen Sturge, of Nice, the average death-rate from typhoid fever in that town during the summer quarter was below the average, or, at any rate, not above. He is, however, forced to admit that during the month of September the mortality from this source was rather more than double that of last year. The correspondent of an English journal calls attention to the prevalence of epidemic disease in that city at the present time, urging intending visitors to defer their departure until an official report has made it clear that a sojourn in this charming town is not attended with grave danger to health and life. The fact is that the sanitary law in France is wofully defective, and the authorities lack the power to enforce even the most elementary precautions in the event of an epidemic.

A Prize for the Invention of a Microphonic Audiphone.—Baron Leon de Lenval, of Nice, offers a prize of three thousand francs to the inventor of the best application of the principles of the microphone in the construction of a portable apparatus for the improvement of hearing in deaf patients. Instruments for competition should be sent to Professor Adam Politzer or Professor Victor V. Lang, Vienna, before December 31, 1892. The prize will be awarded at the Fifth International Otological Congress, to be held at Florence, in September, 1893. If no instrument is judged worthy of the prize, the jury reserve the right of announcing another competition, unless Baron de Lenval decides to otherwise dispose of the prize. The members of the jury are: Drs. Adam Politzer (President), and Victor V. Lang, of Vienna; Benni, of Warsaw; Gellé, of Paris; Urban Pritchard, of London; St. John Roosa, of New York; and Grazzi, of Florence.

A Crematorium at Glasgow.—A memorial has been presented to the Necropolis Committee in Glasgow from a cremation society asking for permission to build a crematorium, chapel for funeral services, and columbarium for the deposit of cinerary urns in the Necropolis. The memorial was referred to the Directors of the Merchants' House, and they have published it in their report, with the view of learning the state of public opinion concerning the proposal.

A Case of Lead-poisoning from a bullet embedded in the head of the tibia has been reported by Dr. Küstel. The symptoms subsided in a short time after the extraction of the missile.

Strychnine in Inebriety.—Dr. R. M. Phelps, of the Minnesota Hospital for the Insane, has made a series of investigations to determine the value of strychnine in inebriety, and formulates the following conclusions: 1. Nitrate of strychnia, taken steadily in large doses, has a tendency, first, to impair the appetite for liquor; later, to make liquor an incompatible or sickening agent for the time being. 2. The systematic effects of nitrate of strychnia seem to be not injurious. Yet I would be far from advising any private or injudicious use. 3. Chloride of gold and sodium was only given in small doses the last five days of the twenty-one, and it is only mentioned here because it seemed to bring out a positive sickening tendance on the patient, and see that the former underclothing and clothing are thoroughly disinfected by either sulphur, boiling in water, steam or spraying with disinfectant cologne, and allowed to dry, and shall not attend any non-contagious disease without a permit from the health officer. Every clergyman conducting burial service over the body of any person dying of either of said diseases shall observe the regulations given above for physicians."

Yellow Fever at Santos.—Reports [illegible] Santos, Brazil, M.D. Vol. II., Part I. 4to, 44 pages, illustrated.

Text-Book of Nervous Diseases—being a Compendium for the Use of Students and Practitioners of Medicine. By Charles L. Dana, A.M., M.D. With 210 illustrations. 8vo, 524 pages, red parchment muslin, price, $3.25. William Wood & Company, New York.

Diseases of the Chest, Throat, and Nasal Cavities, including Physical Diagnosis and Diseases of the Lungs, Heart, and Aorta, Laryngology and Diseases of the Pharynx, Larynx, Nose, Thyroid Gland, and Œsophagus. By. E. Fletcher Ingalls, A.M., M.D. Second edition, revised and enlarged. 240 illustrations. 8vo, 700 pages, extra muslin, price, $5.00. William Wood & Company, New York.

The Ready Reference Handbook of Diseases of the Skin. By G. T. Jackson, M.D. 8vo, 553 pages. Illustrated. Lea Brothers & Co., Philadelphia, Pa.

Medical Microscopy. By F. J. Withered, M.D. 8vo, 406 pages. Illustrated. P. Blakiston, Son & Co., Philadelphia, Pa.

Practice of Medicine. By Edwin T. Doubleday, M.D., and J. D. Nagel, M.D. 12mo, 221 pages. Lea Brothers & Co., Philadelphia, Pa. Price, $1.00.

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Histology, Pathology, and Bacteriology. By B. S. Beach, M.D., and B. B. Gallaudet, M.D. 12mo, 165 pages. Lea Brothers & Co., Philadelphia, Pa.

Modern Materia Medica. By H. Helbing, F.C.S. Third edition. 8vo, 202 pages. Lehn & Fink, New York.

On Congenital Obliteration of the Bile-ducts. By John Thomson, M.D. 8vo, 52 pages. Illustrated. Oliver & Boyd, Edinburgh.

A Manual of Medical Jurisprudence and Toxicology. By H. C. Chapman, M.D. 8vo, 237 pages. Illustrated. W. B. Saunders, Philadelphia, Pa. Price, $1.25.

A Manual of Physics. By W. Peddie. 8vo, 501 pages. Illustrated. G. P. Putnam's Sons, New York. Price, $2.50.

The Mastoid Operation. By S. E. Allen, M.D. 8vo, 111 pages. Illustrated. Robert Clark & Co., Cincinnati, O.

Tuberculosis of Bones and Joints. By N. Senn, M.D. Royal octavo, 520 pages. Illustrated. Cloth, $4.00, net; sheep, $5.00; half-Russia, $5.00, net. The F. A. Davis Co., publishers, 1231 Filbert Street, Philadelphia, Pa.

A Manual of Medical Jurisprudence. By Alfred Swain Taylor, M.D., F.R.S., revised and edited by Thomas Stevenson, M.D., London. Eleventh American edited with citations and additions from the twelfth English edition, by Clark Bell, Esq. Royal octavo, 787 pages. Illustrated. Price, cloth, $4.50; sheep, $5.50. Lea Brothers & Co., Philadelphia.

Fever Nursing. By Mary Harris. 12mo, 67 pages. The Record Press, London.

Diseases of Children. By C. A. Rhodes, M.D. 12mo, 170 pages. Lea Brothers & Co., Philadelphia. Price, $1.00.

screwed down we may hope that the alcohol will boil at 79° or 80° ., and that not more than one-fifth its volume will evaporate in an hour's boiling. Such a result will usually follow, but we cannot depend upon its doing so. On the one hand, the leakage may be more than this; on the other, the jar may be so tightly sealed as to allow the alcohol to rise to 90° or 95° C., and the gut is rendered useless by an hour's exposure to this temperature. It is far better to boil the alcohol under ordinary atmospheric pressure and then recondense it. This gives a constant temperature and very little liability to mishap. Hence very small-sized gut may be used, with the knowledge that it will be strong after the preparation.

I submit the accompanying apparatus as the simplest I have yet seen.

A condenser (Fig. 1) is made by encasing a coil of block tin tubing in a cylinder of sheet copper. The height of the cylinder is 7 inches; its diameter, 3½ inches. The length of the tubing is 4 feet; its internal diameter, ⅛ inch. A piece of the tubing, 5 inches in length, projects from the top of the cylinder, and is shaped into a hook. A straight piece, 2 inches in length, projects from the bottom. The condenser may be suspended by this upper hook, or may rest on a retort-stand or tripod. Two taps are inserted into the cylinder for the transmission of water in and out. The lower one is attached by rubber tubing to a faucet for running water, the upper one is fitted with a rubber tube to provide for the escape of the water. The catgut is put into alcohol in such a jar or bottle as is convenient. The piece of block tin tubing at the bottom of the condenser is fitted into a perforation in the cork of this bottle or jar.

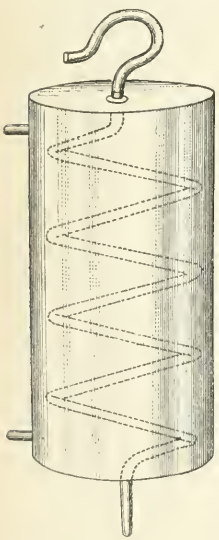

Fig. 1.

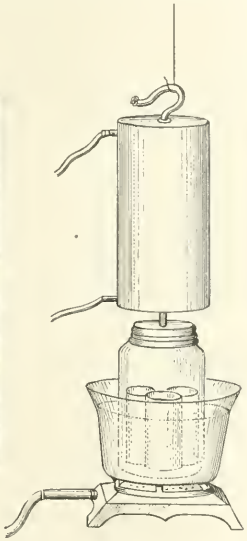

Fig. 2.

A water bath is made by placing a small basin of water on a gas stove or over a Bunsen burner.

The apparatus should be so placed that the jar which contains the alcohol is partly immersed in the water (Fig. 2). Heat is then applied to the water-bath until the alcohol boils. It may be kept boiling as long as is desired without especial attention, and with no loss of alcohol, since it is recondensed as fast as it is vaporized, and drops back into the bottle. The capacity of the condenser is such that the vapor from a quart of alcohol is condensed as rapidly as it is produced by ordinary boiling. The alcohol after an hour's boiling and recondensing shows no trace of either tin or lead from the tubing. A bit of absorbent cotton should be inserted in the upper end of the tubing.

The apparatus may be obtained from the W. F. Ford Surgical Instrument Co., Thirty-second Street and Fifth Avenue, New York City.

This method puts within the reach of every surgeon an easy and efficient way of obtaining catgut which is aseptic, and which is pliable and strong. It is believed that boiling alcohol is much more efficient than any chemical antiseptic solution, which weakens the catgut so little.

Oil or fat is a great protection against the action of chemical solutions. Silk threads [2] which are impregnated with pus bacteria and then dipped in oil, may lie for days, and even for weeks, in an aqueous 1 to 2,000 solution of corrosive sublimate without the killing of the bacteria. Catgut is regularly greasy before it has been bleached, and in the process of twisting it much of the greasy surface is turned into the interior of the strand. It is thus particularly difficult to destroy the life of the bacteria or spores, which are carried within the strand in the twisting, and are there more or less protected by fatty matter. Boiling alcohol is a very strong solvent of fatty matter, and is thus especially well fitted to penetrate the small crevices in the catgut, and so to bring the germicidal action of the heat and the alcohol to bear on all contained bacteria and spores.

Heated liquids seem to have remarkable germicidal power. Boiling water [2] kills spores in two minutes which withstand steam ten to fifteen minutes, and dry heat at 140° C. two to three hours. Heider [3] found that five per cent. carbolic acid solution, when heated to 75° C., killed anthrax spores in three minutes, although they were not killed in it at the room temperature in thirty six days.

The germicidal power of boiling alcohol is certainly greater than that of the chemical solutions ordinarily used in the preparation of catgut. Hodenpyl [1] found that anthrax spores were regularly killed by it within forty-five minutes. Let us see what the action of sublimate and carbolic acid solution is upon these organisms. Geppert [4] saturated threads with anthrax spores, and immersed them in 1 to 1,000 aqueous corrosive sublimate solution for varying lengths of time. On removing them he precipitated the adherent sublimate with ammonium sulphide, and then placed the threads in culture-media. He found that after one, two, and three hours in the sublimate solution a few spores retained their power of growth, and in one exceptional case he obtained a growth beside a knot in the thread after twenty-four hours' immersion. Behring [5] obtained growths from anthrax spores which had been immersed in 1 to 1,000 sublimate solution for ten hours. Nissen [6] found that anthrax spores could live after a four hours' immersion in one per cent. corrosive sublimate solution. They have repeatedly retained their power of growth after being immersed for days in a five per cent. carbolic acid solution.[3, 7, 4, 11]. Thus we see that boiling alcohol is a much more powerful germicide than the solutions of carbolic acid or corrosive sublimate which are ordinarily used.

Although anthrax spores are considered the most resistant of infective agents,[8] it is important that the medium which is used for sterilizing the catgut should be capable of killing them, since there is always a possibility that they may exist in the sheep's intestine, from which the so-called catgut is prepared. Volkmann [9] has reported two cases where anthrax pustules appeared in wounds at the points where catgut sutures were taken. He thought the infection due to the catgut.

This efficacy of boiling alcohol is no more than we would expect from other observations than those of Hodenpyl. The following table shows a few of the results which have been obtained by studying the germicidal effect of various media at different temperatures :

Germicidal agent.	Temperature at which it was used.	Kind of micro-organism.	Length of exposure necessary for killing the micro organisms.*	Observer.
Boiling water.	100° C.	Anthrax spores.	2 minutes.	Geppert, Berl. klin. Woch., 1890; p. 246; Schimmelbusch, Arch. f. klin. Chir., xlii.
Boiling water.	100° C.	Bacilli and cocci.	2 to 5 seconds.	Ibid.
Boiling water.	100° C.	Staphylococcus pyogenes aureus; bacillus pyocyaneus.	2 to 3 seconds.	Ibid.
Boiling one per cent. aqueous solution of sodium carbonate.	100° C.	Anthrax spores.	2 minutes.	Ibid.
Boiling one per cent. aqueous solution of sodium carbonate.	100° C.	Pus; staphylococci; bacillus pyocyaneus.	2 to 3 seconds.	Ibid.
One and four-tenths aqueous solution of sodium carbonate.	85° C.	Anthrax spores.	8 to 10 minutes.	Behring, Zeitsch. f. Hygiene, 1890, p. 451.
One and four-tenths aqueous solution of sodium carbonate.	80° to 83° C.	Anthrax spores.	10 minutes.	Ibid.
One and four-tenths aqueous solution of sodium carbonate.	77° C.	Anthrax spores.	15 minutes.	Ibid.
One and four-tenths aqueous solution of sodium carbonate.	75° C.	Anthrax spores.	20 minutes.	Ibid.
One and four-tenths aqueous solution of sodium carbonate.	70° C.	Anthrax spores.	30 to 60 minutes.	Ibid.
Five per cent. solution of carbolic acid.	Ordinary room-temperature.	Anthrax spores.	Not killed in 36 days.	Heider, Centralblatt f. Bact. und Parasitk., Bd. ix., p. 221.
Five per cent. solution of carbolic acid.	55° C.	Anthrax spores.	30 minutes.	Ibid.
Five per cent. solution of carbolic acid.	75° C.	Anthrax spores.	15 minutes.	Ibid.
Blood.	55° C.	Anthrax bacilli.	10 minutes.	Toussaint, quoted by Fraenkel, Grundniss Bact'kunde, p 257.
Weak alkaline bouillon.	54° C.	Koch's comma bacillus (cholera).	3 minutes.	Van Geun's Arch. f. Hygiene, 1889, p. 402.
Weak alkaline bouillon.	56° C.	Bacillus of typhoid fever	3 minutes.	Ibid.
Weak alkaline bouillon.	60° C.	Bacillus of septicæmia of mice.	Few seconds.	Ibid.
Weak alkaline bouillon.	78° C.	Bacillus of malignant œdema.	Few seconds.	Ibid.
Weak alkaline bouillon.	80° C.	Pneumococcus of Friedlander.	1 minute.	Ibid.
Weak alkaline bouillon.	70° C.	Tubercle bacilli.	10 minutes.	Yersin, Annals de l'Inst. Pasteur, T. 1, No. 2.
Milk.	68° to 69° C.	Tubercle bacilli.	30 minutes.	Bitter, Zeitsch. f. Hygiene, 1890, p. 255.

* The times given are not absolute, because in all cases the organisms were exposed to a certain varying heat while the medium was being heated and was cooling.

Three facts are very well illustrated by this table: 1. There is great advantage in using heat in disinfection. 2. Liquids heated to a temperature of 60° to 80° C. kill all known infective agents, in some cases in a few seconds, in others in a few minutes. 3. The micro-organisms which ordinarily cause suppuration are far easier to kill than the anthrax spores which are used as tests.

Judging from the results expressed in the table, we would expect that the ordinary pyogenic bacteria would be killed in boiling alcohol in five minutes or less, and anthrax spores in about half an hour. This corresponds well with Hodenpyl's results. Hodenpyl used ninety-seven per cent. alcohol with a boiling-point of 79° C. I have found that the boiling-point of the ninety-five per cent. alcohol obtained from a reliable druggist is about half a degree higher. The more water there is in the alcohol the higher is the boiling-point, the greater the germicidal power when boiling, and the greater the injury done to the catgut by the process.

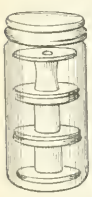

Fig. 3.

Another advantage in this method comes from the ease with which infection of the catgut may be prevented after it is once sterilized. Professor Halsted [10] has devised an excellent method of sterilizing his silk ligatures and sutures on bobbins in test-tubes, and using them one by one as needed. A somewhat similar device may be used for catgut. Glass reels are made, each half an inch long, with flanges one inch in diameter which are so shaped that the ends of the reels are concave. Two or three yards of gut can be wound on each without overlapping enough to prevent the free access of the alcohol. Three of them fit, one above the other, in a small cylindrical screw-topped jar † (Fig. 3). Rubber washers are fitted into the covers of these jars, and they, containing reels of catgut, filled with alcohol, and having the caps screwed on, are put, three at a time, in a pint Mason preserve-jar. The pint jar is then three-fourths filled with alcohol, attached to the condenser, and put in the water-bath. After an hour's boiling the small jars are taken out and their caps tightened. Each reel may be taken from the jar as it is needed. The surgeon holds it in his left hand and unrolls the gut as he ties the ligatures. It unrolls easily if the reel is held loosely between the thumb and third finger so that the nails are in contact with its concave ends. The flange protects the gut from contact with any foreign substance until it is unwound. Thus from the time the gut is sterilized until it is applied in the wound, the only foreign substance which it touches is the hand of the surgeon. It is not exposed to infection from contact with perforated stoppers, necks of bottles, scissors, forceps, towels, gowns, hands of assistants, etc. That which remains in the jar has not been disturbed. It is not difficult to tie the ligatures with the reel in the hand, if the hands are crossed in tightening either the first or the second half of the knot.

† Whitall, Tatum & Co's one-ounce Glycerine Jelly-Jars.

I made a series of experiments in attempting to seal the jars tightly after they contained the gut and the alcohol, and then putting them in a steam sterilizer. In this way I hoped to subject the gut to the action of alcohol, at a temperature of 100° C., and so to sterilize it more quickly and easily. I tried all the available varieties of preserve-jars and fitted rubber disks and washers into several kinds of small screw-top and clamp-top jars. None of them retained the vapor of the alcohol under pressure without leaking. The pressure was sufficient to bulge the metal cap of four-ounce screw cap jars, and to force out rubber washers which were clamped down with strong screw clamps, and to force up a rubber stopper so that the heavy twine which held it pressed into it one-quarter inch.

A jar can doubtless be constructed which will stand this pressure, but there would always be the danger of a slight leak which would escape detection, but which would prevent the alcohol from rising much above 80° C. Alcohol under pressure at 90° to 100° C. weakens catgut in a short time. Hence, in attempting the method, we are dealing with very uncertain elements. If there is a little leakage the gut will not be sterilized by a short exposure in the sterilizer; if there is no leakage it will be

made useless by a long exposure. Boiling at atmospheric pressure with a fixed temperature seems still the best and most reliable method.

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THE INFLUENCE OF DIATHESIS UPON THE PROGRESS OF PHTHISIS.[1]

BY S. E. SOLLY, M.D.,

COLORADO SPRINGS, COL.

AT the meeting of the Climatological Association, held in Washington, September, 1891, Dr. Alfred Loomis read a paper founded on the post-mortem examinations of 524 patients dying in Bellevue Hospital, of whom eight per cent. presented evidence of arrested pulmonary tuberculosis. In all cases fibrosis had taken place around the tuberculosis tissue, confirming, as he writes, the statement of Ziegler that "the arrest of tuberculosis can only take place when the inflammatory process issues in the development of fibrous tissue."

Dr. Loomis goes on to state that a condition of intense hyperæmia always surrounded the tuberculous areas when recent fibroid processes were active, leading him to believe that this was an essential condition. He then asks the question, Why do these reparative processes occur only in a limited number of tubercular subjects? and says the answer is found in the diathetic tendencies of different individuals, and writes as follows: "In one person the tendency to fibroid development is above the normal of systematic harmony. In another rapid parenchymatous cellular developments occur under purely physiological stimulus, and become excessive under pathological. We call these conditions fibroid and strumous diatheses. It is, however, important to remember that fibroid processes which are injurious under some conditions may become directly conservative under others, and two opposing diatheses may result in the relief or cure of diseases produced by one or the other, the result being obtained by the very intensity of the diathetic condition. Whenever necrotic changes occur in the parenchymatous tissue, fibroid development is the only method of repair; but when the cause of the necrosis is especially powerful only a pathologically strong fibroid activity will suffice for its arrest. The histories of many cases of pulmonary tuberculosis afford striking proof of this antagonist action of diathesis. I have long been convinced that there is a relative immunity possessed by arthritic individuals, not only against pulmonary, but against all forms of tuberculosis, and I have made many observations which appear to me to prove that in a patient whose parents suffered from general fibrosis, or who presents active evidence of this diathesis, tuberculosis of the lungs, bones, joints, and glands shows a marked tendency to assume a chronic course and to a spontaneous cure." He next proceeds to give the brief outlines of some typical cases.

With the view of pursuing this inquiry, so ably opened by Dr. Loomis, I have analyzed the 141 cases of phthisis previously reported by me, and whose temperamental peculiarities and their influence on the progress of the disease I presented to you at our last annual meeting. Of the 141 cases 25 had gouty tendencies, that is, 10.6 per cent., the percentage of improvement among those without this diathesis was 65.8, and those with it 66.6, showing only one per cent. greater improvement among the gouty cases.

[1] Read before the Colorado State Medical Society, June 22, 1892.

Of the 141 cases 58 per cent. showed a family predisposition toward phthisis; the percentage of improvement among these was 69, while among the non-hereditary cases it was 61.4 per cent.

Among the gouty, however, the per cent. of improvement in those with hereditary phthisis is reversed, being higher in the non-hereditary, the combination of both inheritances being the worst, the percentage of improvement among the hereditary with gout being only 33.3, while among the non-hereditary with gout the percentage was 66.6, about up to the average.

With Respect to the Duration of the Disease.—Previous to coming to Colorado the gouty cases averaged a year longer, and in the total duration of the illness, that is before and after coming, the difference is still more marked, the gouty cases lasting a third longer, that is, nine years instead of six, so that the gouty cases were slower both in improvement and deterioration.

The known syphilitics in the series were only two, and one improved and the other did not. This, of course, gives no sufficient data, and I have not so far investigated this matter. My impression is, however, that the gross results in cases of combined syphilis and tuberculosis would be found very similar to what has been found in connection with gout.

Six of the 141 cases were rheumatic, of whom 5 improved, being the high percentage of 84.3, while the total duration of those cases was only three years and ten months.

GOUT.

Before coming to Colorado:

	Years.	Months.
24 Gouty cases	3	8
117 Non-gouty cases	2	4
Total Duration of Illness:		
Gouty cases	9	0
Non-gouty cases	6	4
Rheumatic cases	3	10

Improved:

	Per cent.
Gouty cases	66.6
Non-gouty cases	65.8
58 Hereditary cases of phthisis	69
83 Non-hereditary cases of phthisis	61.4
3 Hereditary with gout	33.3
21 Non-hereditary with gout	66.6
6 Rheumatic	83.3

Although, as I have elsewhere demonstrated by comparison with the reported cases of other physicians, the 141 cases from which these observations are taken may be considered as fairly representative, yet they are, of course, too few to safely generalize upon; therefore these figures can only be correctly judged when many more are taken to compare them with. So far, however, they do not bear out the opinion of Dr. Loomis, that the gouty diathesis is necessary to procure arrest in most cases of phthisis, as we find the percentage of improvement in the gouty and non-gouty nearly the same. And, on the other hand, when we look into the cases of hereditary phthisis, where we would expect to find the opposing or strumous diathesis generally developed, we find the percentage of recoveries eight per cent. higher, and this is confirmed by the cases of Dr. Fisk and others, the former's being 73 per cent. This, while admitting that arrest must come through local fibrosis, appears to negative the assumption that a diathetic tendency to fibrosis, as is exhibited in gout, is an aid to recovery. The greater percentage of improvement among those in whom inheritance was marked is probably due to the evident fact that such persons are on the look out for becoming phthisical, and place themselves earlier under treatment than those whose family are free from taint, and when affected are more cautious in their conduct.

Among the six rheumatic cases we find an unusually high percentage of improvement, about fifteen per cent.

higher than the general average. But these cases are too few to form any conclusions from.

Of the twenty-four cases of gout only three had also an hereditary tendency to phthisis, which would aid in confirming Dr. Loomis's opinion of the opposition between the two diatheses.

When we come to the belief expressed by the Doctor that the fibroid diathesis tends to increase the duration of phthisis, we find strong evidence in its favor, the gouty cases being a third longer in duration than the non-gouty. And I feel sure that the complete record of the entire number of cases of phthisis I have had under my care would fully confirm this. On the other hand I have formed the opinion that where the manifestations of gout are active in the individual, and accompanied, as they usually are, with hepatic and gastro-intestinal derangements, the hindrance to nutrition, comfort, and exercise that these usually cause more than counterbalances the possible advantages of a more energetic local fibrosis. Further, I am inclined to believe that it is among such that we find most cases where deterioration and death appear to ensue from too expensive and unchecked fibrosis, after the tuberculosis process has been apparently arrested.

It seems to me, however, very probable that a slight inherited tendency toward gout which does not proceed to any seriously disturbing symptoms affords the best chance of the tuberculosis being checked by an early, sufficient, but not overmastering fibrosis.

There is, however, a possibility that my observations made upon phthisis treated at an altitude yield different conclusions to those made on cases treated in low climates, for the reason possibly that the effect of lessened barometric pressure, in conjunction with the other attributes of an elevated climate, may cause a much greater tendency to fibrosis; and so, on the one hand, more often oppose successfully the strumous diathesis, and, on the other, aggravate the gouty or fibrous diathesis, so as not only to first cure the disease, but later kill the patient with the remedy. The statement of Dr. Loomis that local hyperæmia appears an essential condition in fibrosis would help to explain the working of this suggested influence of altitude in procuring fibrosis, as it is generally believed, for good reasons, that high climates induce pulmonary hyperæmia. Moreover, as it would appear probable the healthy lung is expanded by the demand for increased oxygen, and so compresses the diseased portions, we have another reason for fibrosis being specially induced.

The present time may seem an unfortunate one for discussing the influence of gout, when the very existence and diagnosis of this ancient and revered enemy of the human race is being called in question. But although time and space do not permit us here to weigh the evidence upon this subject, all who have had much clinical experience must admit the fact of a condition of ill health which we recognize and call by the name of gout, account for it and explain its phenomena how we may.

The Sitting Posture During Delivery.—Dr. J. T. Webster, in the *Medical Brief*, gives the following reasons for preferring the sitting or squatting position to the dorsal decubitus during labor: 1. Because the law of gravitation naturally assists in the expulsion of the fœtus. 2. Because the leaning of the body forward, and pressing of the abdominal muscles against the thighs, assist materially the expulsion during contractions of womb. 3. It relieves the colon, lumbar nerves, and perineum of the weight of the child. 4. It avoids the continual getting up to evacuate bowels or empty the bladder. 5. It prevents the laceration of the perineum by relieving it of the downward pressure against it. He especially observed that as soon as cases assumed this position they were satisfied, and were greatly relieved of all the unnecessary pain and discomfort of labor.

Progress of Medical Science.

Glycerine in the Treatment of Hepatic Colic.—Dr. Ferrand has published a paper on this subject with the following conclusions: 1. Glycerine administered by the stomach is absorbed as such by the lymphatic vessels, notably by those which proceed from the stomach to the hilus of the liver and to the gall-bladder; it is found even in the blood of the subhepatic veins. 2. It is a powerful cholagogue and a valuable remedy in hepatic colic. 3. In large doses (5 to 8 drachms) glycerine cuts short the paroxysm at once. 4. In smaller doses (1 to 4 drachms) glycerine, taken daily in a little alkaline water, prevents the return of the attacks. 5. Glycerine, although not a lithontriptic, is the remedy *par excellence* for biliary lithiasis.—*La France Médicale.*

The Moral Side.—In an address before the Marion-Sims College, Dr. C. H. Hughes says: "The study of the physician includes the moral as well as the physical well-being of man, for the purity of the soul has much to do with the health of the body. The purity of the heart and the dominance of the body by principles of rectitude, has much to do with the health and consequent happiness of present and succeeding generations. The direct and hereditarily entailed diseases which are the offspring of sin, and *vice versa*, which have filled and are filling the land with misery and woe, both physician and divine are alike especially interested in preventing. The psychology of sin and the pathology of crime are studies alike for doctor and divine. The man who is sick in his soul is seldom well in his body, and the soul's affairs do not prosper well when the body is disordered. Like the divine, the physician may also aid in healing 'the wounded in spirit and the broken-hearted,' and in 'binding up their wounds.' He may 'minister to a mind diseased,' and 'with sweet oblivion's antidote cleanse the stuffed bosom of that perilous stuff which weighs upon the heart.' He does this effectually through the modern successful management of melancholia."—*Alienist and Neurologist.*

Menstruation and Lactation.—It is a generally received view that the supervention of menstruation during the period of lactation is prejudicial to the quality of the maternal milk-supply, and therefore detrimental to the nutrition of the child. Most practitioners will probably state as a matter of observation, that menstruation unfits the mother as a nurse by reducing the quantity of the milk, in addition to rendering it more "watery." In order to ascertain the real effect of menstruation on the quality of the milk, Dr. Schlicter has made a series of analyses which seem to show that the current belief is founded on defective observation. In addition to careful examination of the composition of the milk during and after menstruation, he had the child weighed and its general condition noted at and after the same period. He reports that in respect both of casein and fat, the milk secreted during menstruation compared favorably with that furnished prior to that date. The differences observed, moreover, in no case equalled those which occur in the milk of the normal healthy female at the various periods of the same day; hence he declines to attach any importance to them.—*Dietetic Gazette*

The Dyspnœa of Advanced Bright's Disease.—Dr. Steell thinks that common dyspnœa of advanced stages of Bright's disease is due to heart failure, and is not toxæmic. He points to the benefit obtained in many such cases from the hypodermic injection of morphia, as inconsistent with the presence of toxæmia. He recommends digitalis, or when it fails, strophanthus, citrate of caffeine, nux vomica, or strychnia. In paroxysmal dyspnœa he says the nitrates are disappointing; he recommends morphia, enjoining caution in its use, and its combination with atropine.—*The Birmingham Medical Review.*

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE PRACTICAL SIDE.

THE season is approaching when the doctor must look to the business side of his profession, make up his annual, semi-annual, or quarterly accounts, and send out his bills. And a pity and a shame it is that so many of those bills will never be heard from again. We hear a good deal of the evil of dispensaries and free hospitals, and of the injury they work to the young physician in depriving him of the practice that is justly his due, and the evil is truly great. But it sinks into insignificance in comparison with far greater and more widespread evil of the delinquent patient. The dispensary abuse works injury to the young physician chiefly, and to those living in or near large cities, but the crime of the dead-beat affects all alike, the young and the old, the urban and the rural practitioner. It is not too much to say that, overcrowded as the physician is, there are few who would fail to support themselves and their families, in an humble way at least, if they could but collect all that is due them for services rendered.

But physicians themselves are not entirely blameless in the matter. If they were better business men and were more honest to themselves they would be less frequently defrauded of their pay. In the first place, they are often careless in keeping up their books, letting them go unposted sometimes for weeks, and then when they do attempt to write them up, many items are forgotten and the dates of the visits made are omitted or guessed at. The books are thus rendered valueless as evidence, and the physician is liable to be non-suited if in his desperation he attempts to collect his bills by process of law. The only safe and the only business-like way for the man in busy practice, or in practice at all, is to write up his books every day, putting down the number and dates of the visits and office consultations and the amount charged for the same This takes a little time, but it is time well spent, and will save time and money too in the end.

Another fault of the physician is in the matter of charges. The relations of the family physician to his patients are often of the most intimate and confidential character. He is frequently the confidant of his patients and is entrusted with family secrets and accounts of all the financial and other troubles which afflict them. He learns perhaps that business has been bad, or the crops have been poor, and it will be hard work to pay the interest on the mortgage, and he naturally sympathizes with the people in their trouble, and concludes to make no charge against them for his services. But the holder of the mortgage does not take off any of the interest due him, the storekeeper does not furnish them with goods for nothing, or even at cost price, the wheelwright doesn't mend their farm wagons gratis. Neither does the storekeeper or the blacksmith or the wheelwright work for the doctor for nothing. If the horse casts a shoe he must be shod, if the buggy or sleigh breaks down it must be repaired, or the doctor will be unable to visit these patients (whom he is too kind-hearted to charge) when they send for him in the night. But the new shoe for the horse, the new wheel on the buggy, the new shafts in the sleigh must be paid for.

Keep your books properly posted, have a fixed rate of charges, send out your bills promptly at regular intervals and insist upon their being paid promptly—in other words, have business methods in transacting the business part of your profession. Then you will be more likely to live in moderate comfort while you are here, and to leave a provision for your family when you are called away.

SURGICAL WORK AT MACUTO, VENEZUELA.

REPORTS from La Guayra, Venezuela, give vivid accounts of surgical aid rendered wounded Venezuelan soldiers of both parties, by the naval medical officers of the flagship Chicago. Medical Inspector J. Rufus Tryon, U.S.N., Fleet Surgeon of the North Atlantic Station, acting under orders of Rear-Admiral Walker, proceeded at once to Macuto as soon as it was known that there were a number of wounded in that vicinity suffering for want of surgical attention. Dr. Tryon had associated with him in the interests of humanity, Passed Assistant-Surgeon Urie and Assistant-Surgeon Whitfield of the Chicago; Staff-Surgeon Triggs of the British navy; Dr. Paramitto of the Spanish navy, and Staff-Surgeon Thalen of the German navy. Their duties were most arduous, and according to the reports in detail made to the Admiral by Medical Inspector Tryon, and just received at the Navy Department, continued during several engagements, and until the final success of General Crespo as Provisional President of Venezuela.

Dr. Tryon was directed to take to Macuto such medical and surgical supplies as he deemed necessary, from the Medical Department of the Chicago, and was most fortunate in having at hand all that could be required to establish a modern hospital, successfully equipped for the treatment of every case coming under the classification of military surgery.

The good results following all the surgical work that was done, can only be owing to the skill of Dr. Tryon and his assistants, and the abundance of necessary supplies at his command.

We can only now mention some of the principal grave surgical operations that were performed, and results, referring our readers for details to the special reports of Medical Inspector Tryon that will soon be published with the Annual Report of Surgeon-General J. Mills Browne, U.S.N.

Death followed in only two cases after surgical operation for severe gun-shot wounds, viz., one amputation at shoulder-joint, parts partially gangrenous at time of op-

eration, and the case of excision of hip-joint, where the ball was found to be embedded in the sacrum.

The following are the operations: One excision of the hip-joint, two amputations at shoulder-joint, one amputation at superior part of upper third of thigh, one amputation at lower third of thigh, one amputation at lower third of leg, one excision of the shoulder-joint and resection of arm, one excision of first metatarsal and partial resection of second metatarsal, one operation at upper part of hip, for removal of bones in compound comminuted fracture of the ilium.

Dr. Tryon and his associates are to be congratulated for their military service at Macuto, as it was conscientiously performed in the cause of humanity regardless of the dangers attending it. The Geneva Cross was unknown and unheeded by the soldiers in Venezuela.

Before the flag-ship Chicago left La Guayra, General Guerra, second in command of the Venezuelan forces, accompanied by his staff, made an official visit of inspection of the hospital organized by Dr. Tryon at Macuto, and conveyed the thanks of General Crespo and the Venezuelan Government for the services rendered their wounded by the medical officers of the American navy.

FREE TRADE AND THE MEDICAL PROFESSION.

Some of our contemporaries are urging the immediate removal of the tariff on microscopes, medical and surgical implements and scientific works. In scaling down the tariff, we believe that the medical profession should be on the alert to see that its interests are provided for. We want our surgical instruments as cheaply as possible, and we have quite the same right to a reduction as any other profession, or class of workers. At the same time it is a convenience to have prosperous surgical instrument makers at our doors; and we do not want to have to send to Germany every time we need a new kind of knife, or a new surgical implement of any kind. Therefore, it is better that the medical profession will not urge free trade in surgical instruments at once. The same is true of books and microscopes. There are several prosperous firms making these latter instruments, and they also have interests at stake. Let the profession urge its rights to cheaper products, but keep in mind what is due to those supplying us now.

HELP FOR THE PAN-AMERICAN CONGRESS.

When the International Medical Congress was held in Washington, five years ago, the National Government, if we recollect correctly, appropriated a modest sum to aid in entertaining the visitors and sustaining the work of the Congress. This courtesy has been extended by nearly all the governments and municipalities in the countries where the meetings have been held.

It is establishing no precedent, therefore, when the representatives of the Pan-American Medical Congress ask for some aid. This Congress could be made of much more practical, public value to the United States in many ways, than could an International Congress. For it will bring together men best versed in the sanitary conditions of the Southern Republics; men also of liberal education, whose knowledge of, and sympathy with, our institutions would lead to closer fraternal feelings, as well as indirectly to commercial benefits. The better Pan-Americans know each other, the better it will be for this Western hemisphere, and the proposed Congress will form a factor of great public importance as well as of technical interest.

Again, Washington, as a city, is unable to extend the municipal hospitalities on the scale demanded by great meetings, and Congress has in a great measure assumed municipal functions in the District of Columbia. Hence, as representing the city, it ought to deal generously by its American guests. There is no subsidy in this, any more than when any city government helps along great meetings and demonstrations for the public good.

We note that some of our medical societies have passed resolutions praying Congress to make an appropriation to defray some of the expenses of the All-American meeting. Such action should be imitated all over the country. But in addition, the societies should see to it that their Congressmen are directly appealed to. The passing of resolutions by a county medical society will of itself have about as much effect on the average Congressman as one rhubarb pill on a very constipated elephant.

News of the Week.

State Association of Railway Surgeons.—At the second annual meeting of the New York State Association of Railway Surgeons, held at the Academy of Medicine, November 14th, Dr. George Chaffee, of Brooklyn, was re-elected President.

Dartmouth Medical College held its ninety-fifth Annual Commencement on November 22d, and conferred diplomas upon a class of twenty-eight.

Collapse of a "Gold Cure."—An institution established at Long Branch, for the cure of inebriety on the injection plan, has gone to pieces, owing to lack of money and patients.

The City of Hamburg last week celebrated its relief from the epidemic of cholera. There are still a few new cases daily reported in the city, but the epidemic has ceased and the mortality-rate is at its normal average.

Dr. Franklin H. Hooper, of Boston, one of the most eminent laryngologists of New England, died on November 23d, from cancer of the throat. Dr. Hooper was forty-two years old. At the time of his death he was attached to the Massachusetts General Hospital, and was Professor of Laryngology at Dartmouth Medical College.

A Sterile State.—According to the last census one-fifth of the married women of Massachusetts are childless. Suffolk County seems to be a particularly barren spot, 23.89 per cent., or nearly one-fourth, of the married women being childless. We should like to know if this is due to arsenical wall-paper, or to growing Democracy, or to just plain culture combined with sterpiculture.

Surgeon-General of Connecticut.—Dr. Patrick Cassidy, of Norwich, has been appointed by Governor-elect Morris Surgeon-General of Connecticut.

Typhoid in St. Louis.—There is a serious epidemic of typhoid fever in St. Louis; nearly thirteen hundred new cases have been reported during the past week.

The American Public Health Association meets this week at the City of Mexico.

New York Polyclinic.—Dr. W. H. Katzenbach has been elected Professor of General Medicine at the New York Polyclinic; Dr. Andrew J. McCosh, a Professor of Surgery; Dr. Florian Krug, a Professor of Gynecology; and Dr. Edward B. Dench, a Professor of Otology.

Railway Surgery at the Pan-American Medical Congress.—A Section of Railway Surgery of the Pan-American Medical Congress has been organized, with Dr. C. W. P. Brock, of Richmond, Va., as Executive President. A full list of officers has been provided for each of the constituent countries.

They Don't Do It.—The *Medical Progress* is informed that the regular profession in Louisville consults with homœopathic physicians freely and whenever an opportunity presents itself "for a fee." *Progress* denies this, and says: "The homœopathic members of the faculty of Louisville amount to but little. It is rare that one hears of a homœopath, and we cannot help believing that our contemporary has been grossly misinformed."

Pylorectomy and Vivisection.—Experiments on animals for the purpose of studying the best methods of intestinal suture have been cited as illustrations of the value of vivisection. Replying to this, Mr. Lawson Tait makes the following extraordinary statements: "Resection of the intestine does not differ in any one of the principles involved, nor very much in details. In whatever part of the intestinal canal it is practised 'pylorectomy' has nothing therefore to single it out as a case where experiments on animals are required more than in other parts of the intestine. But if Mr. Jessett wishes to claim for it such a character I will grant his premise at once, because it is one of the class of operations which I utterly condemn. I have never done it, and I never shall, for the disease is malignant nine hundred and ninety-nine times in a thousand, and inevitably returns. In the odd case where the disease is not malignant the operation of pyloric dilatation (Loreta) has been shown to be sufficient. We now know also that such operations as gastro-enterostomy lead to permanent and continuous fecal regurgitation, so that the whole scheme of such operations is gradually being dropped. This is the fate I predicted for them years ago." Surely nothing could be more absolutely false than this. Without going into statistics it is sufficient to say here, that in New York, within a short time, two operations for gastro-enterostomy have been successfully done, with great, and so far permanent, relief to the patients.

Some Legislation that Georgia Needs.—The *Atlanta Medical and Surgical Journal* says: "The Georgia Legislature last year passed with a rush a bill prohibiting physicians from getting drunk, but strangled in committee meeting another requiring the medical colleges of the State to adopt the three-year course, thereby assuming the Pharisaic attitude of tithing mint and anise and cummin, while neglecting the weightier matters of the law. There is one matter which the Legislature of Georgia ought to consider. In fact it can no longer afford not to do so. This State needs, and needs badly, a Board of Medical Examiners, who shall pass upon the fitness or unfitness of those wishing to practise medicine within its limits." A committee has been appointed by the Atlanta Society of Medicine to prepare and submit a bill to the General Assembly providing for the establishment of a State Board of Examiners.

The Cooper Medical College of San Francisco has adopted a four years' course.

Sir Andrew Clark and Doctors in Politics.—Sir Andrew Clark's sixty-sixth birthday took place a few days ago, on which occasion the editor of the *Evening News and Post* wrote: "Sir Andrew Clark will be known to all future ages as the physician of Mr. Gladstone. A native of 'dear old Scotland,' he is in some ways the best-hated man in the profession. He is a physician and a teetotaller. Many people say of him and his class, 'A physician may be the greatest quack in the world. A surgeon you can test; he operates successfully or not; but the doctor, who sees what no one else sees, and hears what no one else hears, and knows what none others know, can't be tested.' Sir Andrew Clark, however, can be tested by this one proof of success, that he has kept alive and energetic our Premier to the age of eighty-three. Sir Andrew is said to be indignant at the nonsense talked at the dinner given to Sir Walter Foster, the first medical man who has ever been in office in England. The reason why medical men don't get into political office, of course, is clear; the medical man can't get promoted to a judgeship, or county court judgeship, or magistrate's office by getting into the House. The barrister can. Wisely then he sticks to the mortar and pestle. Of the ten doctors now in Parliament, all, save Sir Walter Foster, are Irish or Scotch Home Rulers."—*Hospital Gazette.*

The Dangers of Honest Journalism.—The question whether honest, outspoken journalism pays so well as namby-pambyism, and the oblique puffing of quackery, is one which sometimes forces itself on one's notice. A few months since we dared to call in question the behavior of the treasurer of a certain London institution—which shall be nameless for the present—in his public capacity, and forthwith both the subscriptions and the advertisements to this journal were at once stopped, at the direct instigation of the hyperæsthetic official. A little later we thought it our duty to call attention to the so-called "Chloride of Gold Cure for Inebriety," and before very long we were served with a notice of action for libel. This week we have to acknowledge the receipt of another of these interesting missives. Count Mattei is aggrieved at our remarks on cancer-curing, and failing to extract a humble apology for venturing to question his wonderful powers, he, too, has caused a writ to be served upon us for "damages, for injunction, and for costs;" the latter goes without saying where lawyers are concerned.—*Medical Press.*

Scientific Obstetrics as Conducted at Winkel's Clinic at Munich.—In the obstetrical department the annual average of births is about eleven thousand, of which the great

majority are illegitimate, this latter being due to the fact that criminal abortion in this country is very rare, the laws being very strictly enforced, and the offender severely punished. The sale of drugs that may produce abortion is forbidden, and they are only to be had on the prescription of a legal practitioner. The work in the obstetrical department is conducted as follows: As soon as the parturient or pregnant woman comes in, she is examined by the physician on duty to see whether labor has actually begun; if not, she is either sent home, or, if confinement is expected within a short time, taken in to be occupied in the clinic, and also in the courses given to students in the methods for examination of the pregnant, and in acquiring manual dexterity. If she is found to be in labor, she is ordered to undress, the skin is examined for scabies; if found this is treated at once, and her clothes, before return at the time of discharge, properly disinfected. Pediculosis pubes, if found, is also treated at once, the parts being shaved. She then receives a bath under supervision of the midwife on duty, and is given a bed in the confinement chamber. Her history is taken, then her general health is inquired into, the lungs, heart, etc., examined, then abdominal examination follows and all conditions are carefully noted. I may here state that external examination, palpation, auscultation, and pelvimetry ought to be much more generally impressed on the student's mind by teachers of obstetrics than it has in the past. With comparatively little practice it is astonishing what dexterity one may acquire in diagnosing the exact position of the child, thus reducing internal examination to a minimum, not only to the mother's comfort, but also lessening the danger of sepsis through the accoucheur's fingers.

I have learned to value the pelvimeter; it often enables one to foretell a prolonged case of labor when least expected by the general aspect of the patient. This holds good, especially in flat rachitic pelves of a slight degree, when the history of the case gives no information. By taking accurate measurements of the pelvis we can diagnose slight contractions early in labor, and can inform the relatives of probable operative interference. This will only tend to strengthen the confidence of the patient in the physician, when, if the life of child or mother is endangered, the obstetrician states the necessity of such interference. This will often obviate the embarrassing situation when relatives, confronted with facts, hesitate, and will not consent to an operation being performed until valuable time has been spent in calling consultation, thus losing a living child.

The examination of the parturient is concluded by the internal examination, after thorough disinfection of the hands and forearms of the operator, and the vulva and adjoining parts of the mother. Intravaginal disinfection was abandoned long ago, and is now only practised in cases of gonorrhœal infection. The method of disinfecting the hands in this hospital is as follows: The nails, which are kept short and smooth, are cleaned dry at first. Hands and forearms are brushed in hot water with soap for three minutes, changing the water several times; this procedure is followed by brushing for two minutes in a solution of bichloride of mercury, 1 to 1,000. The brush used is a large hand brush, not such as you find on a lady's toilet stand. Sublimate causes in some, at first, an eczema, but it generally passes away in a day or two, never to reappear. After disinfection of the hands *nothing* is touched—water faucets, bedclothes, or anything else. The midwife in attendance lifts the blankets; the physician with two fingers of one hand separates the labiæ, and introduces one or two fingers, not oiled, but direct out of the bichloride solution, of his other hand in the vagina, then the mother is covered again.—*Cor. Occidental Medical Times.*

Laying of the Corner-stone of the New York Post-Graduate Medical School and Hospital.—The corner-stone of the large new building which the New York Post-Graduate Medical School and Hospital is about to build at the northeast corner of Second Avenue and Twentieth street, was recently laid. The Rev. Marvin R. Vincent, of Union Theological Seminary, opened the exercises with prayer. Dr. D. B. St. John Roosa, President of the corporation, made a brief address and laid the corner-stone.

The address of the day was delivered by Dr. T. Gaillard Thomas. He described the origin of the school in 1882, and sketched its course since. It began with less than one hundred students, and now numbers over five hundred. Its sole object, he said, was not only the instruction of physicians who wish an enlarged knowledge, but also the creation of similar centres of learning in other cities of the country. In the course of his remarks he said: "The time has surely arrived when a Secretary of Public Health, chosen from the ranks of medicine, should constitute one of the members of the cabinet of the President of the United States; when quarantine, with the host of questions which cluster around that word, should be a national, and not a State, function; and when medical men should be so thoroughly informed upon hygiene, by competent instructors in all our colleges, that no political body in our land would dare to stultify itself and insult public opinion by placing a merchant at the head of the Health Board of one of the largest seaports in the world."

The new medical school and hospital is to be a five-story building of Indiana limestone and white brick. It will front one hundred and ten feet on Twentieth Street and ninety feet on Second Avenue. It has not been modelled after any other medical school or hospital in the city. To the eye it will look like a handsome business building. The idea was to construct a building in which the students, being practitioners of medicine, could meet their instructors at the bedsides of patients. It will contain two clinical lecture-rooms, with ante-rooms for the preparation of patients and their examination in detail by one or more practitioners, an operating amphitheatre, and numerous small rooms for special study. It will accommodate one hundred and eighty patients and one thousand students.

A Medical Pavilion of Roosevelt Hospital.—Mrs. Abram A. Anderson has offered $350,000 to the Roosevelt Hospital for the founding of a medical pavilion in memory of her father and mother. The only conditions of the gift are that the clinic shall be free to students, and be under the charge of Dr. Francis P. Kinnicutt. The trustees promptly accepted the gift with thanks.

Reviews and Notices of Books.

Essentials of Medical Diagnosis. By S. Solis-Cohen, M.D., Professor of Clinical Medicine in the Philadelphia Polyclinic, etc., and Augustus A. Eshner, Instructor in Clinical Medicine in Jefferson Medical College, etc. Pp. 382. Philadelphia: A. B. Saunders. 1892.

This manual is No. 17 of Saunders's Question Compends Series, which we have already commended in these columns. The present addition fully sustains the reputation of its predecessors. Meant for students, it is properly written from their standpoint and confines itself well to its text. It is a very good book for the student to begin with, as it will guide him in the perusal of the larger treatises on medicine. As implied in the title, diagnosis is the point aimed at, and no reference whatever is made to treatment.

Transactions of the Medical Association of Georgia. Forty-third annual session, 1892. Pp. 320. Published by the Association at Atlanta, Ga. 1892.

In addition to the usual official reports the volume contains twenty-three papers of interest. The general appearance of the Transactions is most creditable.

Fourteenth Annual Report of the State Board of Health of the State of Connecticut, for the Year Ending November 30, 1891. Edited by Charles A. Lindsley, M.D., Secretary State Board. Pp. 649. New Haven: Tuttle, Morehouse & Taylor. 1892.

The contents cover a wide range of topics, including not only matters of public hygiene, sewerage, water supply, etc., but also elaborate tables of vital statistics. Several valuable reports of bacteriological analysis of drinking-water are included. Too much praise cannot be awarded to Dr. Lindsley for the able manner in which the volume has been compiled. It well serves as a model for all similar publications. Much of the technical work of examination of water, etc., has been done by the chemical department of the Yale University Medical School, under the able supervision of Prof. Herbert E. Smith, Dean of the Medical Faculty.

Colotomy: Inguinal, Lumbar, or Transverse, for Cancer or Stricture with Ulceration of the Large Intestine. By Herbert W. Allingham, F.R.C.S., Surgeon to Great Northern Hospital, etc. 8vo. Pp. 198. London: Baillière, Tindall & Cox. 1892.

The book is a collection of the author's experiences in the various operations of colotomy, and an attempt to arrange and explain, in a systematic manner, the principles which guide him in his practice. It is, therefore, largely written from a clinical standpoint. It consists of a large number of clinical histories with full details of operative technique, illustrated by fairly well executed woodcuts. The type is broad and attractive in appearance.

The author's well-earned reputation will secure many readers among those who follow the surgical craft. While the impress of his own originality is everywhere shown, he gives a kind and cordial recognition to the work of others.

Surgical Treatment of Neuralgia of the Fifth Nerve. By William Rose, M.B., F.R.C.S., Professor of Surgery, King's College, etc. Pp. 85. London: Baillière, Tindall & Cox. 1892.

The three lectures constituting this volume were delivered on the Lettsomian Foundation before the London Medical Society, in 1892, and have already been published in *The Lancet* and *British Medical Journal*. Nevertheless, collected by themselves in separate form, they can be more carefully read, and with greater profit. Several woodcuts illustrate the operative procedures advised, and frequent references are made to the literature of the subject.

The Student's Handbook of Surgical Operations. By Frederick Treves, F.R.C.S., Surgeon to London Hospital, etc. Pp. 495. Philadelphia: Lea Brothers & Co. 1892.

This is an abridgment from the author's larger Manual of Operative Surgery, and therefore is concerned only with the most essential and most commonly performed operations. It is assumed that the student is familiar with general surgical anatomy, and with the principles of after-treatment.

Probably no writer on surgical topics is better able to condense more information into few words than is Mr. Treves. His own experience gives weight to what he says, and he is careful to separate the essential from the irrelevant. The book is one to be unhesitatingly commended.

A Treatise on Hygiene and Public Health. By Thomas Stevenson, M.D., Lecturer on Chemistry at Guy's Hospital, and Shirley F. Murphy, Medical Officer of Health of London, etc. Vol. I. 4to. Pp. 1013. Philadelphia: P. Blakiston & Co. 1892.

Seventeen contributors have labored to produce this monumental work. The topics treated are air, warming, and ventilation, meteorology, water, food, clothing, public hygiene in its several departments, influence of soil and climate on health, etc.; valuable references are made also to the inspection of food-products. Nine valuable plates are included in the volume.

All the topics are treated with a thoroughness of detail leaving nothing to be desired. The contents are valuable alike to the physician, the municipal health officer, and the sanitary engineer.

Proceedings of the United States Naval Institute. Vol. XVIII., No. 3, 1892. Annapolis, Md.

The present volume consists of six lectures on First Aid to the Injured, and on Transportation of the Wounded, by Henry G. Beyer, M.D., Ph.D., M.R.C.S. The lectures are copiously and well illustrated, and form altogether one of the best and most complete brochures upon these subjects that we have seen.

Gladstone on the Medical Profession.—According to the *Pall Mall Gazette*, the Grand Old Man has a very high opinion of physicians. It seems that some German writer made the statement that Mr. Gladstone had prophesied that doctors were destined to become the leaders of the people. Somebody who saw the quotation wrote to the veteran statesman for confirmation or contradiction. Mr. Gladstone wrote in reply: "So far as regards the exact words cited in your letter I cannot positively say aye or no, and I rather think that I should in using them have added some qualifying or limiting expressions. But it is certainly a fact that for a very long time I have believed the medical profession to be both in a state of absolute advance from the progress of its science—this it may be said is a mere commonplace—and of relative advance from the particular features attaching to our civilization in its onward movement."

Beri-Beri in New York.—Five Chinese sailors on the British steamer Tetartor, which arrived from the Philippine Islands recently with a cargo of raw sugar, were found to be suffering with beri-beri. The vessel was seventy-five days making the voyage, and when it had been one month at sea, a Chinese sailor died of the disease. The Health Department was notified and an inspector had the five sailors removed to the Hospital for Contagious Diseases at Flatbush.

Society Reports.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, November 9, 1892.

H. P. Loomis, M.D., President, in the Chair.

Difficult Diagnosis.—Dr. J. Lewis Smith presented specimens from a case in which the diagnosis was doubtful. The patient, Agnes M——, three years of age, was admitted to the New York Foundling Asylum three months ago, in an apparently dying condition. No history of her condition immediately preceding her admission could be obtained. At the time of entering the asylum the radial pulse was imperceptible, the respirations were 64, and the temperature 106° F. in the rectum. Soon after this she was seized with severe general convulsions, for which no cause could be assigned. The urine was examined, but with negative result. The child improved rapidly after these convulsions ceased, and was soon apparently well. She remained in this condition for three months, when suddenly, at 3 A.M. on November 4th, she had another attack of convulsions, accompanied by a rise of temperature to 105° F., and the pulse 180, with 58 respirations per minute. Seven hours later she was partially conscious, the convulsions had been controlled, and auscultation of the chest showed only harsh respiratory sounds. The urine still continued to yield a negative result on examination. She passed a fairly quiet night, and when first seen by the speaker on the following morning, her pulse was 140 F., respirations 44, and temperature 104° in the rectum, and she had a peculiar vacant stare. When the arms were raised above the head, and percussion made in the axillary region on the right side, some dulness was found, but only harsh breathing was heard over this area. There were no other symptoms present, and after a careful examination the only diagnosis which was made was that of pneumonia of the upper part of the right lung. Shortly afterward the urine was again examined, and was found to contain about twenty per cent. of albumin, and some hyaline casts. By evening the pulse had reached 150, and was quite feeble, necessitating the employment of stimulants. The respirations were 43, and the temperature 105° F. The following morning the temperature was 104°, and the child was constantly rolling the head and throwing herself about the bed. She died at 6 P.M.

At the autopsy the upper and posterior portions of the brain were found to be congested, there was some œdema over the convexity. On cutting into the brain, the sinuses were found filled with long fibrinous plugs, and in some portions these were blood-stained. The larynx and trachea were normal. The upper lobe of the right lung was uniformly consolidated, the finer bronchial tubes, posteriorly, contained dark red and slightly granular plugs of fibrin. A similar exudate was found over the portion of pleura corresponding to this part of the lung. The heart, liver, and spleen were normal. The intestines contained a good deal of mucus, and the solitary follicles and Peyer's patches were swollen, but not ulcerated. The kidneys were swollen and congested, the capsules not adherent, and the markings were obscure.

Even in the light of the pathological examination, the diagnosis was still doubtful. There was a possibility of the case being one of cerebro-spinal meningitis. Ever since 1871, when the disease first appeared as an epidemic among the horses of car lines, it had been endemic in this city, although at present cases of this kind were comparatively rare. It would seem, however, that in this case there had been sufficient time for the formation of an exudation of fibrin around or upon the brain at some point, and there should have been during life some rigidity of the spine and retraction of the head. Shortly before death, this child was able to bring the head forward to take a drink. It was possible, also, that the child might have had a mild form of typhoid fever, which had been overlooked until the occurrence of the severe symptoms which ushered in the pleuro-pneumonia. In young children it is sometimes extremely mild, and runs its course in from five to nine days. He had seen typhoid fever occur in children who were up and around during the whole course of the disease, yet the diagnosis was confirmed by the adult members of the same family soon developing the disease in its typical form. Personally, he was of the opinion that the severe convulsions in the case just reported accounted for the condition of the brain, but he could not explain the appearances found in the intestinal canal.

Malignant Ulcerative Endocarditis.—Dr. Eugene Hodenpyl presented two specimens of above. The first specimen was removed from David C——, forty one years of age, a laborer of intemperate habits, who had had eight attacks of acute articular rheumatism, and for ten years past had suffered from palpitation and dyspnœa on exertion. For the past four months the dyspnœa and palpitation had become much more troublesome, and had been associated with cough and muco-purulent expectoration. The urine had been scanty during the last two months, and the patient had rapidly emaciated. One week before admission his feet became swollen, and the dyspnœa quite severe, and when he entered the hospital his pulse was 102, respirations 28, and the temperature 100.2° F. The urine had a specific gravity of 1.010, and contained a trace of albumin. The apex of the heart was found in the fifth space, in the nipple line, and its action was regular. There was a loud systolic murmur, and a circumscribed presystolic murmur at the apex. One week after his admission he suddenly lost consciousness, and died in a few hours. During his stay in the hospital his temperature had been irregular, varying from 99° to 101° F. The autopsy showed a sacculated pleurisy, with effusion in the lower part of the left chest, and both lungs œdematous and partially consolidated. The heart-muscle was flabby, the aortic valves thickened, and the mitral valve was thickened, stenosed, and covered with vegetations. It was also the seat of ulceration, and immediately behind this was a small abscess. The right heart was normal. The kidneys were small, and contained many cysts; the capsules were adherent, and the cortex thinned, and the markings obliterated. The blood-vessels at the base of the brain appeared to be normal. The left hemisphere was occupied by a very large blood clot. Dr. Cheesman made cultures from the ulcerated mitral valve, and these showed the presence of the streptococcus pyogenes.

The second specimen was removed from Alfred W——, forty-seven years of age, a man of intemperate habits. He stated that he had had chancre twenty-two years ago, but had never had rheumatism. One week before admission, after exposure to wet, he began to cough and to expectorate dark colored mucus, and three days later he was seized with severe pain in the right side of the chest, the breathing became more rapid, and, according to his friends, he was occasionally delirious. On admission, he was slightly cyanosed, the pulse was 118, respirations 48, and the temperature 102.8° F. The urine had a specific gravity of 1.04, and contained a trace of albumin, and granular and hyaline casts. Physical examination showed dulness from the right apex anteriorly to the fourth rib, and from the fourth to the sixth rib tympanitic resonance with bronchial breathing over the area of dulness, and bronchovesicular respiration over the tympanitic area. All over the right side of the chest, anteriorly and posteriorly, were numerous crepitant râles, and posteriorly there was dulness down to the angle of the scapula, and below this tympanitic resonance. Over both areas breathing and voice were bronchial in character. Over the left side of the chest, posteriorly from the apex to the angle of the scapula, and near the vertebral column, bronchial râles were heard, but these are evidently transmitted from the right side. All over this side of the chest the breathing and voice were exaggerated. The apex-beat of the heart

was imperceptible, and the heart-sounds were heard most distinctly in the fifth space The action of the heart was regular but feeble. The patient remained almost constantly delirious, with an irregular temperature, varying from 102° to 104 5° F., until his death, nine days after admission. The autopsy showed recent adhesions over the upper part of the right lung, and a few old adhesions over the posterior part of the left lung; the latter was congested and œdematous. Portions of the right lung were consolidated, and the whole lung was studded with large and small abscesses, some of which communicated with branches of the pulmonary artery. The heart was flabby, and there were patches of thickening on the visceral pericardium. The aorta was normal, but the aortic valves were greatly thickened and stenosed, and were the seat of extensive ulceration, which had produced perforation through one cusp. The papillary muscle was streaked with pus. There was also hypertrophy of the wall of the left ventricle, with dilatation. The spleen was enlarged, soft, and friable. The left kidney was large and pale, its cortex was thick, and the markings indistinct, while the right kidney was the seat of several red and white infarctions. Cultures made by Dr. T. M. Prudden from the heart vegetations, papillary muscle, kidneys, and lungs, showed the presence of the streptococcus pyogenes; and cultures from the abscesses in the lungs showed the presence of the staphylococcus pyogenes aureus. Those made from the spleen were negative.

Dr. T. M. Prudden said that the bacteriological literature of malignant endocarditis was so meagre, that every opportunity should be improved for making cultures, and enlarging our knowledge of this subject. Apart from its intrinsic interest, it was a perpetual source of instruction, for it illustrated the importance of a local lesion in favoring the growth of the bacteria. It is probable that in every case of malignant endocarditis there is some antecedent lesion of the valves which has caused the development of the growth of bacteria in this situation. It is a little curious that the bacteria circulating in the blood should not set up a suppurative inflammation in the glandular organs, but when once beginning on the valves of the heart, secondary abscesses are very prone to follow.

Miliary Tuberculosis and Gummata, Occurring in the same Lung; Their Differential Diagnosis.—Dr. Hodenpyl also presented a specimen showing miliary tubercles and gummata in the same lung, and exhibited the characteristics of each under the microscope. The specimens were removed from a middle-aged man, who died in the hospital of delirium tremens. Notwithstanding his habits of life, he was an example of unusually good physical development, and all the organs except the right lung were normal. This lung showed in its upper two-thirds a considerable number of small, grayish, hard nodules, closely resembling in appearance the miliary tubercles. Scattered about the lung were other and larger nodules, about one-fourth of an inch in diameter, round and hard. On section they presented a white surface, and surrounding them was a zone of pearly hue. It was interesting to note in connection with this case, that although this man was intemperate and dissipated, and had considerable disease of the right lung, there were no symptoms during life referable to this condition, and the tubercles and gummata were shown under the microscope to be fibrous. The case was a rare one, and of unusual interest, as bringing up the question of the differential diagnosis between tubercles and gummata. Although there is apparently no good reason why they should not be associated together, especially as we know that syphilis is very apt to be followed by tuberculosis, this was the first time he had met with the two conditions in the same organ. It is well known that chancre and chancroid cannot be differentiated by microscopical examination, and that the morphological characteristics of tubercular and syphilitic inflammation have many points in common. In many cases the specific bacterium of tuberculosis may be of assistance in the diagnosis, but as yet there are no well founded claims for the existence of such an organism in cases of syphilis. The following points of differential diagnosis may be emphasized, although, of course, there are many exceptions to the general statements made:

1. The history of tuberculosis in the one case, and of syphilis in the other, may be of importance.

2. The bacteriological examination is usually positive in tuberculosis, unless the tubercles are very old and fibrous; it is negative in syphilis.

3. Inoculation experiments are usually positive in tubercle, and negative in gumma.

4. Tubercles are usually present in considerable numbers, and are scattered throughout the entire organ, and throughout the body; gummatous deposits are usually single, or are present in small numbers, and are confined to a single organ.

5. Tubercles are usually much smaller than gummata.

6. Tubercles show a marked tendency to undergo cheesy degeneration and to form cavities; gummata rarely become cheesy, usually drying up and undergoing calcification.

7. Amyloid degeneration is sometimes present in tubercles, but, so far as known, is absent in gummata. On section, the tubercles appear as round or irregular grayish masses, often soft or cheesy in the centre, and surrounded by a zone of inflammatory products.

8. Microscopical examination will show the presence of tubercle bacilli in the tubercles; but no characteristic micro-organism is present in syphilis. Giant cells are present usually in tubercles, and are usually absent in gummata.

Dr. J. S. Ely exhibited under the microscope specimens of gummata from a case of hereditary syphilis in a child. In its structure the specimen very closely resembled that of miliary tubercles.

Dr. Martha Wollstein also exhibited a slide illustrative of the difficulty of differentiating between syphilis and tubercle. The specimen was taken from the lung of a child twenty-two months old. There was no family history of syphilis. The maternal grandfather died of acute phthisis about one year before the birth of the child. At the time of admission to the hospital, there was dactylitis, a consolidation of the right lower lobe of the lung, and a very fetid purulent otitis. At the autopsy the left lung and pleura appeared to be normal. The right lung also appeared normal, except the lower lobe. This was covered by recent pleuritic exudation, and the substance of the lobe was riddled with cavities of varying size, filled with a soft cheesy material. The parietal pleura over this lobe was studded with small masses, apparently cheesy, and similar masses were found on the peritoneal surface of the diaphragm. There were also a few small, solid nodules in the lower lobe of this lung, which resembled gummata, and even on microscopical examination the existence of giant cells and also of cheesy matter made the differential diagnosis extremely difficult. The peritoneum also showed the presence of cheesy matter and of giant cells. The liver, spleen, and kidneys were absolutely normal. About fifty sections were stained, but no tubercle bacilli were found; hence, the diagnosis of syphilis was made.

Melano-sarcoma with Melanuria.—Dr. J. S. Thacher presented specimens from two cases of above. Both occurred in St. Luke's Hospital, one in the service of Dr. Davis, and the other in that of Dr. Ball. In the first case there was an enormous melanotic tumor of the liver, probably secondary to a similar growth in the eye. In the second case there was a large melanotic growth at the base of the left lung, also several subperitoneal tumors, and two similar growths in the posterior part of the left cerebral hemisphere. In one case the correct diagnosis was suspected shortly before death, and in the other a partial diagnosis was correctly suggested. Both cases gave a marked reaction for melanine in the urine, and they are reported chiefly on account of the assistance which this urinary reaction sometimes renders in making

the diagnosis, particularly where, as in these cases, the other symptoms were obscure.

The first patient, the one with the tumor of the liver, was a sea captain, forty-nine years of age, who, for two years previous to his death, had experienced great distress after eating, a sense of constriction about the waist, and sometimes a sharp stabbing pain. He sometimes vomited, with relief, but he had never raised any blood. For the past year he had noticed an enlargement of the abdomen, and during this time he had been troubled with constipation and flatulence. During the last few months of his life he lost flesh and strength rapidly. There was slight jaundice at times. On examination, the liver was found to nearly fill the abdomen, and sixteen ounces of a dark-brown fluid were withdrawn from the abdominal cavity by aspiration. At the autopsy the liver was found reaching to within two inches of the symphysis pubis, and to within one inch of the extreme left of the abdominal cavity, the top of the diaphragm lying on the right side at the level of the third rib, and on the left side at the level of the fourth intercostal space. The liver weighed twenty-nine pounds, or as much as eight or nine normal livers. Its right lobe was very firm, of a dark-bluish color, and presented on its surface numerous whitish nodules, one to six millimetres in diameter. On section, it was of a dark-brown color, with nodules like those found on the surface. The left lobe presented a cystic tumor, ten inches in diameter, and on puncturing it dark blood spurted out. On introducing the finger into the cavity, the contents appeared to be soft clots No other tumors were found. Some years ago the patient had had one eye enucleated for some trouble, the nature of which could not be ascertained. The heart, spleen, and kidneys presented on section an unusually dark color.

The second patient was a housewife, fifty-three years of age, who had been under observation only five days before her death, and whose mental dulness prevented her giving a satisfactory history. She suffered from general malaise, vomiting, often brought on by eating, and headache. Her pulse was rapid and feeble, but regular. The temperature was normal, except that on the day of her death it rose to 101.6° F. The physical examination of the chest showed only dulness on percussion over the lower part of the left lung, and at the upper border of this area of dulness the respiratory murmur was increased, and there were subcrepitant râles. She stopped breathing and became cyanotic when turned on her right side, one quarter of an hour before her death, but the breathing recommenced when she was turned again on her back. The usual examination of the urine was negative. At the autopsy there was found at the base of the left lung, and attached to the diaphragm, a nodular tumor six inches in diameter, black, partly of grumous consistency, and partly firm enough to slice. A similar nodule, two inches in diameter, was found at the surface of the left occipital lobe of the brain, and dipping into its tissue, and in the white substance of the posterior part of the left parietal lobe was a nodule, one and one-half inch in diameter. Four subperitoneal tumors presenting the same appearance, and varying from one and a half inch to two and a half inches in diameter, were found attached to the intestine, omentum, and abdominal wall. On section the heart, liver, and kidneys were of a dark color. Specimens were shown from the lung, peritoneum, and brain. Microscopical examination showed in both cases that the growths were spindle-cell sarcomata, with a large amount of pigment. The urine from the first patient was turned a very dark color on the addition of acids; hydrochloric acid colored the whole urine quite dark, and gave a very heavy black precipitate. The urine obtained from the bladder of the second patient gave the same reaction, though not so marked. Either nitric acid, or hydrochloric acid, produces a nearly black color, and a similar reaction is obtained on the addition of chloride of iron.

Dr. Thacher said other cases had been reported, in which the black coloring matter had been recognized in the urine, where internal melanotic tumors were present, yet the chemistry of this coloring matter is not well understood. When the urine is first voided, it is normal in color, but after standing a while it becomes darker, and the color is deepened by the addition of oxidizing agents. It has been stated that the coloring matter was not always of the same composition, and that it has been detected in cases other than melanotic tumors—for instance, in marasmus; yet these are so exceptional, that the presence of the coloring matter may be considered of considerable value in diagnosticating the existence of melanotic tumors. The best reaction is obtained with a moderately strong solution of chloride of iron, the dark color first produced deepening after standing for some time. Dr. Thacher then demonstrated this test.

Miliary Tuberculosis of the Lungs and Kidneys, with Tubercular Ulceration of the Bladder.—Dr. D. H. McAlpin presented for Dr. Biggs two specimens: The bladder showed perforating ulcers going down to, and in some cases even through, the mucous coat. There were a few miliary tubercles in the lungs, and calcified areas at the apices.

Dr. Thomas H. Manley asked whether the point of original infection was in the lungs, or by way of the bladder, as it had been claimed that the kidneys might be affected by an ascending or a descending infection.

Dr. McAlpin replied that the tubercles of the lungs presented the ordinary tubercular cicatrices with calcification of the pleura. He could not say positively as to the origin of the infection, but it probably began in the lungs.

Dr. S. Alexander said that, at the present time, genito-urinary surgeons generally considered tubercular ulceration of the bladder to be much more common as a result of general tuberculosis than of secondary tuberculosis of the lungs. Personally, he knew that in many instances there is a tubercular ulceration of the bladder without any involvement of the lungs, though he had never seen tubercular ulceration or miliary tubercles of the bladder where the seminal vesicles or the prostatic urethra were not affected. He did not know whether or not the disease originated in an ascending infection of the urethra, but the comparative rarity of tubercular disease in the anterior urethra was opposed to such a view.

The Society then went into executive session.

How to Go to Bed.—We have still something to learn in the matter of nursing, according to Dr. Richardson, who tells us in *The Asclepiad* that in hospital, as in private practice, great errors are made in the choice of bedclothing for the sick, and particularly for the sick who are suffering from febrile affections. We have got rid of the heavy curtains around the bed; of the grand accumulator of dust and other uncleanness, the tester; of the heavy vallance, which converted the under part of the bed into a close cupboard, in which all kinds of unwholesome and cumbrous articles lay concealed, including sometimes excreted matter itself; and we have banished the carpet, which often, as a hard-trodden, dust-laden rag, made the floor beneath the bed persistently impure. This is all good; but the old feather-beds, flock-mattresses, heavy blankets, thick, impermeable, and dense counterpanes still encumber many a patient, rendering ventilation of his body as impossible as in the days of our forefathers. The art of going to bed is one which has been studied (and practised) for untold centuries. We have not advanced much on the practice of our forefathers in the West. According to Mr. Ernest Hart, and now according to Dr. Richardson, we "go to bed" in a very unwholesome and stupid fashion.—*British Medical Journal.*

Congress of Dermatology.—The next International Dermatological Congress will be held in London, in 1895, under the presidency of Mr. Hutchinson. The Congress of 1892 was held in Vienna.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

GYNECOLOGISTS TO THE FRONT—WHAT MAKES FOR SUCCESS IN ABDOMINAL SURGERY?—MR. LAWSON TAIT ON TRAUMATIC PERITONITIS — MR. BLAND SUTTON ON TUBAL MOLES AND TUBAL ABORTIONS—THE ADVANTAGES OF AMPUTATION THROUGH THE THIGH IN HIP-JOINT DISEASE.

LONDON, November 1, 1892.

GYNECOLOGICAL specialists have been very much in evidence of late, for discussions on subjects comprised within their specialty have recently taken place at three of the metropolitan medical societies. At the British Gynecological Society Mr. Hawkins-Ambler, of Liverpool, read a paper entitled "What Makes for Success in Abdominal Surgery?" He defined success as the regular, everyday success of the best operators, and not the isolated surgical triumph. He did not regard antiseptics as necessary, and thought the craze for them was a phantasy which was fast passing away; soap and water were more important. He insisted on the importance of absolute cleanliness in the practice of abdominal surgery, and criticised severely the action of surgeons who were careless about fouling the peritoneum with ovarian fluid, urine, fæces, or even pus. A small abdominal incision, when possible, was desirable. The great essential to uniformity of success was rapidity of operating, though nothing was to be shirked or hurried. It must be a factor in the case whether the peritoneum were exposed for ten or fifty minutes. Dr. Max Walthard's experiments showed that drying of the peritoneum was one of the chief causes of peritonitis. This was most surely obviated by rapid work, by promptitude in dealing with emergencies, and resource on the surgeon's part; it was to be mitigated by irrigating with saline solutions, or hot water flushing, at the close of the operation. As regarded drainage, it was difficult to make up one's mind. It might be the best rule to drain when in doubt, and once commenced, one should not be in too great a hurry to withdraw the tube. We should drain where hemorrhage was present at the end of an operation, where it was feared, where there were many adhesions, and where the peritoneum was fouled. We need not drain after flushing if the pelvis has been well dried and cleaned. With regard to after treatment, it was better not to catheterize, or give douches, or morphia, unless from some serious necessity. Many great operators were said to care nothing for temperature, something for pulse, and much for distention—a symptom which usually gave way to a dose of salts or of calomel.

Dr. Inglis Parsons spoke in favor of antiseptics. Some surgeons appeared to be able to dispense with them, but it must be remembered that the general hygienic condition of hospitals was vastly superior now to what it was formerly. Dr. Heywood Smith agreed that rapidity of operation was a matter of great importance, and that it was unwise to waste time in looking for the point of separation of the recti muscles. The catheter should only be used in case of absolute necessity. When the patient's tongue was dry and "typhoid" in character he gave from six to ten grains of dry calomel. He preferred silkworm gut sutures to silk sutures. Mr. Batchelor, of New Zealand, said he thought more lives were sacrificed from trying to operate through too small an incision than from any other cause, and since he had visited this country he had learned the advantage of making an incision large enough to permit of easy manipulation. The danger of exposure during the operation was exaggerated; in a properly conducted ovariotomy there should be no exposure of a kind to do harm. In cases of abdominal distention he had derived the greatest advantage from the insertion of a rectal tube with gentle massage of the abdomen; flatus was passed and the patient at once relieved. Mr. Reeves admitted that rapidity of operation was an advantage, but deprecated any pandering to the gallery; the surgeon's safest maxim was *festina lente*. The President said that once the patient had passed flatus after these operations he regarded her as safe, and this passage of flatus was, in his opinion, of greater significance than temperature or pulse. He had changed his views during the last few years in regard to the feeding of patients; formerly he only used to give slops for some days after the operation.

At a recent meeting of the Harveian Society Mr. Lawson Tait read a paper on "Peritonitis," limiting his remarks to peritonitis following operation. Mr. Tait remarked that he had come to discard all theories of inflammation, including the germ theory. There were, he said, no symptoms and no post mortem appearances whereby peritonitis which was septic could be distinguished from that which was not. The symptoms of peritonitis were numerous, but there was not one upon which absolute reliance could be placed. There were two symptoms which he always regarded with anxiety, viz., alteration of the patient's face and distention of the intestine. He had never seen fatal peritonitis in which distention was not a prominent feature. He considered that the cause of death in peritonitis was the disturbance of the ebb and flow of the serum stream of the peritoneum, and the disturbance of the function of the liver. Preventive treatment was best, for there was no chance of curing peritonitis. He gave up using opium years ago, on the ground that it masked the patient's condition and diminished the vermicular action of the bowels. He had discontinued the administration of ice for the treatment of thirst consequent upon opening the abdomen, and gave warm water in preference. Of late years he had diminished the amount of fluid to the vanishing point, and now absolutely starved his patients for nearly forty-eight hours after operation. If sickness occurred on the third or fourth day, all food (including water) was stopped for twelve hours. Should the patient be unable to pass flatus for twenty-four hours after operation the nurse proceeded, on her own responsibility, to administer a turpentine enema; if this did not succeed a mild purgative was given. He had never said that the purgative treatment would cure peritonitis.

Mr. Alban Doran said he agreed with Mr. Tait as to the advisability of keeping the patient's stomach empty for some time after operation. Nutrient enemata should, however, be given except in young or very robust patients, else in trying to prevent peritonitis the surgeon might kill the patient by starvation. Mr. Jackson Clarke protested against Mr. Tait's pathological opinions, and said the value of his paper was diminished from his not attempting to make any clinical distinction between traumatic and suppurative peritonitis. Mr. Malcolm observed that Mr. Tait had certainly formerly used words which might be taken to imply that peritonitis could be cured by purgatives. He disagreed with Mr. Tait's view as to the nature of peritonitis. He urged that it was an obstruction or a paralysis of the bowels that caused the distention and other symptoms, and that any peritonitis found after death was secondary to this complication. Dr. Heywood Smith said that the profession owed a debt of gratitude to Mr. Tait for having done so much to promote the administration of purgatives in the preliminary stage of peritonitis. When distention passed into peritonitis he quite agreed with Mr. Tait's recommendation of calomel. He gave it himself in even larger doses—eight or ten grains—and found it acted like a charm; it did not generally purge. Dr. Boxall described his experience at the General Lying-in Hospital in regard to scarlatina, and said it was strictly analogous to that of Mr. Tait in operation cases. He could not regard Mr. Tait's contention as to the worthlessness of antiseptics as in any way borne out by his own experience, in so far, at any rate, as he had founded it upon the spread of scarlatina.

At the last meeting of the Medical Society of London, Mr. Bland Sutton read a paper on "Tubal Moles and Tubal Abortion." Mr. Sutton said that in 1890 he re-

lated a case in which the ovum in a tubal pregnancy had become converted into a mole (apoplectic ovum); since then the condition had been generally admitted. Tubal moles could easily be distinguished from uterine moles. The amniotic cavity was eccentric, instead of centric, in consequence of which the thin amniotic membrane was liable to rupture, allowing the embryo to escape; this was why the embryo often escaped discovery after operation. The presence of an embryo, or even of an amniotic cavity, was positive proof of the nature of the mole, but failing them, search must be made under the microscope for chorionic villi. These were characteristic structures, and there was no excuse for confounding them with altered blood-clot. Every blood-clot in the tube was not necessarily a tubal mole, for it was certain that blood-clot might be present in the tube apart from pregnancy. Most specimens described as examples of hæmatosalpinx were really gravid tubes; the term hæmatosalpinx should be restricted to non-gravid Fallopian tubes, distended with blood secondary to occlusion of the abdominal ostium. The retention of the impregnated ovum in the tube usually determined occlusion of the abdominal ostium by the sixth—or, at the latest, eighth—week, unless the ovum happened to be lodged in the ampulla, when of course closure could not take place. The process being a gradual one, so long as the ostium remained patent, the ovum might at any time be extruded through that opening into the peritoneal cavity. When this took place the ovum was invariably in the condition of a mole, and the accident was always accompanied by hemorrhage. To this sequence of events he applied the term tubal abortion. Hemorrhage from a gravid tube, unaccompanied by extrusion of the embryo, constituted "incomplete tubal abortion;" the retention of the embryo in the tube, owing to its being too large to pass through the distal orifice, was a frequent cause of recurrent hemorrhages. The presence of an adventitious opening in the tube-wall did not necessarily imply that the ovum had escaped through the aperture. In tubal abortion the hemorrhage was usually more abundant than in cases of rupture of the tube. Mr. Sutton said he believed that most cases formerly classed as pelvic hæmatocele were really the result of the rupture or abortion of gravid tubes.

At the last meeting of the Medical and Chirurgical Society, Mr. Howse read a paper in which he pointed out the advantages of performing amputation through the thigh in advanced cases of hip-joint disease, when the patient was in a very bad condition. The operation might be performed as a preliminary to, or in some cases instead of, amputation through the hip. By this procedure, the length of the lever having its fulcrum at the hip-joint was reduced and rest thus favored, as less would be required from the muscles controlling the hip-joint. The production of blood of better quality and larger amount would probably be favored by the removal of a mass of tissue acting chiefly as blood-consuming, and very little as blood-producing, tissue. An illustrative case was narrated of a boy of fifteen, with acute tuberculous ostitis of the left leg and ankle-joint, and early mischief in the left hip. He was very ill and emaciated. Amputation through the knee was performed in July, 1879. Great improvement resulted, but suppuration in the hip necessitated excision of this joint rather later, from which he perfectly recovered and had been well ever since.

The Bonacossa Prize.—The subject for the next Bonacossa prize is "Epileptic Psychoses: their Etiology and Clinical Characters." Essays or published works (which must have seen the light subsequently to April 1, 1890) may be written in Italian, French, or Latin, and must be sent to the President of the Academy of Medicine of Turin on or before December 31, 1894. The prize is of the value of 1,950 lire (£78), and if it is awarded to a manuscript essay the money will not be paid till the author presents a copy to the Academy.

DISLOCATIONS AT SIGHT.

To the Editor of the Medical Record.

Sir: In your issue for November 12, 1892, Dr. William Meacher contributes a valuable and interesting article on "Dislocations of the Shoulder," especially in reference to diagnosis. The doctor says that one of the most important diagnostic means we possess is the measurement of the dislocated shoulder, which he thus gives: "Pass a tape measure around under the axilla, and up over the top of the shoulder, about an inch in from the point of the acromion process; and if a dislocation exists you will find that this shoulder measures somewhere in the neighborhood of two inches more in circumference than the sound side."

Dr. Meacher gives Mr. T. Calloway the credit for this point through Bryant. But Agnew in his "Surgery," 1881, while giving the same credit, says that there is a loss of from one to two inches in the vertical circumference. I do not know which author has misquoted. I give the following to show the difficulty of sometimes diagnosing dislocations of the shoulder-joint at sight, and to recall a method:

Some years ago, a bright young doctor returned from the New York Polyclinic, to a country town, blushingly wearing his laurels, and filled with all kinds of surgical technique. Happily the young and resourceful doctor was presented with a dislocation of the shoulder-joint by one of those ruff-diamonds, a village doctor. The ready-method young man could now reflect credit upon himself, and upon the wise men of the East, so he smiled a smile of confidence, and told the old worthy to bring on his man. He would reduce the dislocation by the "New York method," quicker than a gnat could wink.

The patient was told to lay down upon a table, the manipulator placed himself between the dislocated shoulder-joint and the body of the patient, with his back toward the axilla, grasped the patient's hand, and firmly held it against his own hip, while he strongly rotated his own body, and presto, the dislocation was reduced. Apparently he had perfectly triumphed, and with a burst of pride requested his senior to behold the shoulder. The elderly doctor alternately looked at the shoulder, and at the thaumaturgist, and all was symmetry and even pristine beauty about the shoulder. Looks of congratulation, momentary happiness among the doctors. Meanwhile the patient had been passive, but was much impressed, for it was very shortly discovered that the wrong arm had been manipulated.

Thomas R. Evans, M.D.

Burlington, Ia.

The Side to Sleep on.—"Which side should I sleep on, doctor?" he inquired.

"In winter or summer?" asked the doctor, rubbing his chin thoughtfully.

"What's that got to do with it?" exclaimed the patient, half angrily.

"A great deal," responded the doctor, mysteriously.

"I don't see it."

"Of conrse you don't," said the imperturbable; "if you did you wouldn't be here asking me questions about it."

"Go ahead, then," said the patient, sitting back resignedly.

"Well," continued the doctor, "in winter, when it is cold, you should sleep on the inside; but in such weather as this you should sleep on the outside, in a hammock with a draught all round it, and a piece of ice for a pillow. Two dollars, please."

Accidents to Mountain Climbers.—The *Tourist Zeitung* publishes a list of Alpine accidents for 1892. There were 32 fatalities in all, 26 having occurred in ascents without guides, and 6 with guides. Twenty-six were tourists and 6 were guides. Ten were caused by attempts to gather edelweiss.

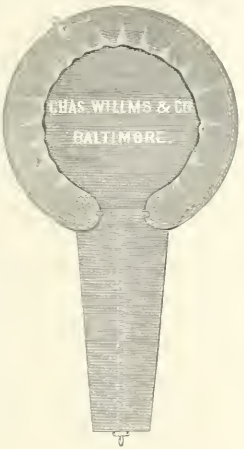
New Instruments.

CONFINEMENT ON THE OBSTETRIC PAD.

By HOWARD A. KELLY, M.D.,

PROFESSOR OF GYNECOLOGY AND OBSTETRICS IN THE JOHNS HOPKINS UNIVERSITY, BALTIMORE, MD.

WHILE the great profits which have accrued to modern medicine from bacteriological studies are realized most fully in the obstetrical field, one notable relic of barbarism remains, that is, the extensive soiling of the bed during parturition. That the bed on which the patient lies should soak up the discharges, from the rupture of the waters down to the gush of blood following the delivery of the placenta, is a practice in direct contradiction to the spirit of all modern surgical work. The discharges themselves are physiological and must come, the objection is to our preparation for receiving and disposing of them, by allowing the bed and bedding and patient's clothing to become the receptacle, an accidental concomitant which is repulsive to the antiseptic conscience of every rightly trained obstetrician.



Obstetric Pad, open.

When living in Philadelphia I saw and heard of cases in which the amount of discharge at the confinement was sufficient to saturate half the bed, and even percolate through the straw mattress, wetting the floor. Among the poor, the old mattress and bedclothing thus soiled cannot often be replaced, and a serious embarrassment confronts the physician, who recognizes the subsequent liability to fermentation of such highly organized albuminous fluids. The sense of culpability in thus leaving a patient lying in a pool of decaying secretions constituting a constant menace to her life, is one distressing to bear.

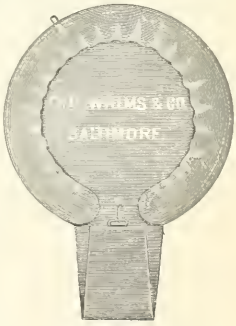
To obviate these dangers every earnest obstetrician has adopted certain precautions for the protection of the bed, limiting the spread of the discharges. To this end, rubber sheeting, prepared absorbent pads, and even newspapers have more recently been pressed into service as protectives, in place of pieces of old cloth and rags and carpet, once familiar articles in the lying-in room; still, however, the nuisance is not entirely abated. I have overcome this evil for several years by conducting all my confinements on a specially devised rubber obstetric pad, a rubber sheet with an inflatable rim which protects the bed, while an opening is left on one side, allowing free discharge of fluids into a bucket or jar placed by its side. This is thus similar in general design to my ovariotomy, perineal, and general surgical pads now in wide use.

The first pad devised for this purpose has been in constant use by some of my friends, notably Dr. Robert L. Dickinson, of the Long Island College Hospital, and Dr. Hunter Robb, who has dwelt upon its advantages in an article published in the *Medical News* of Philadelphia, December 29, 1888. This pad was constructed with the intention that fluids should at once discharge as they escaped from the patient over the apron of the pad, hanging down the side of the bed, and into the bucket on the floor. Experience taught me, however, that the inequalities of some beds were so great that no escape of the discharges took place in this direction, the fluids, on the contrary, remained in the pad, and ultimately even overflowed into the bed.

After some further experimentation, I have settled upon the improved obstetric pad shown in the figures accompanying the text. This has a large inflatable rim, big enough to hold all the parturient discharges without overflowing. At the end of the labor it is picked up, and the blood and amnion with the placenta and membranes gravitate into the bag-like receptacle, which replaces the open apron to the first pad. The pad is then carried into the bath-room and emptied of its contents by letting down the hook which makes a bag of the tube while it is in use, it is then washed clean under a strong stream of water from the faucet. In using the pad, the patient will be most comfortable and the progress of labor can be best observed while she is lying upon her back, with the upper part of the sacrum resting on the inflated rim, thus leaving abundant pad-surface below the buttocks and between the patient's legs for the reception of fluids, child, and afterbirth. It is a mistake to adjust the pad higher up so that the rim rests under the small of the back; it is not serviceable in this position, and by no means so comfortable.

Patients but rarely object to this new accessory to the obstetric wardrobe. I have often heard them express themselves as relieved by the constant elastic pressure made by the rim upon the lower part of the back. A little persistence and assurance will overcome any prejudice at the outset.

Before slipping the pad under the patient, her nightgown should be pulled well up to the thoracic region to clear the rim, she then raises herself upon her heels and shoulders while the warmed pad is placed under her in position as shown in the figure. It should not be brought into use until the bag of waters is about to be ruptured. After the first escape of the larger amount of the amnion, the pad may be removed, and further occasional gushes of fluid caught by large pledgets of absorbent cotton, placed under the vulva, and renewed from time to time, until just before the birth, when the pad, cleaned, and warmed, should be again slipped under the patient and allowed to remain in position until the placenta and clots following have been discharged.



Obstetric Pad, closed.

When labor is thus completed assist the patient in elevating her buttocks while the pad is drawn out, and the buttocks, vulva, and thighs wiped clean with a sterilized towel or absorbent cotton, and a pledget of sterilized absorbent cotton placed beneath the vulva. She is thus allowed to rest at once and without the tedious annoying changes otherwise necessary, not to speak of dangers obviated by greater cleanliness, and a minor but still important item, the saving in the wash.

The greatest inconsistency in our obstetrical practice is thus simply and conveniently removed.

A Queer Kind of a Maid.—A poetical certifier to the merits of a much advertised preparation, states that in his practise "it accompanies the maid from her virgin couch to her lying-in chamber, assuaging the perplexities of maidenhood and easing the trials of maternity." We have nothing to say against the perplexities of maidenhood, for we have no doubt they are as perplexing as most perplexities, but we really think it is improper for a maid to have a lying-in chamber; she ought to be content with her virgin couch.

A NEW SHIELD FOR THE PROTECTION OF EYES AFTER CATARACT OPERATIONS.[1]

By THOMAS J. McCOY, M.D.,

HOUSE SURGEON TO THE MANHATTAN EYE AND EAR HOSPITAL, NEW YORK; MEMBER OF THE SOUTHERN CALIFORNIA AND LOS ANGELES COUNTY MEDICAL SOCIETIES.

THE number of injuries which occur to the eyes for the first twelve days after cataract operations, by accidental knocks or bumps, while asleep or awake, naturally suggests some form of protection to the ophthalmic surgeon, as it has to myself, after observing the results of seven different traumatisms thus produced during my service in the Manhattan Eye and Ear Hospital, so far.

Upon investigating medical literature, and conversing with experienced men on this subject, I find evidences of many other cases injured in the same way, though little accomplished and accepted as a suitable appliance for the mechanical protection, that will prevent the danger and be tolerated until the eyes are safe.

Surely, enough accidents have occurred to prompt us in carrying out a systematic protection in order to secure the complete union of the flaps by allowing nature rest and without disturbance in her efforts in the restoration of the corneal tissue.

Eye-shield.—A, figure-of-eight bandage; B, tapes which hold the shield.

These accidents occurred from the second to the eighth day. The eye was struck with the hand and wound reopened in four cases. Of these, three had prolapse of iris, the other iritis. Another was injured by the patient striking his eye on the corner of the bed, and the other two rubbed their eyes, causing conjunctivitis.

In July, Dr. Kirkendall, of Ithaca, N. Y., while visiting us, reported a case of his who knocked his eye entirely out on the tenth night. As to the protection so far tried, the most effectual is that which was practised by Graefe, viz.: The "handcuffing" or tying the hands to the side of the bed. This treatment was practised here about eight years ago for a while, but finally abandoned because of the serious objections raised by the patients, as it deprives them of the use of the hands, rendering them entirely helpless, and requires the constant attention of a nurse.

For a more desirable safeguard, I present the accompanying shield, which presented itself to my mind, and is shown in the accompanying cut, and has proven itself to be an efficient protection in the last twenty-six cases of cataract operation in the hospital, and one each in the private practice of Drs. Roosa and Webster.

Each ophthalmic surgeon to this hospital has ordered its use on all cases after cataract operations, since its introduction in July, with the following results: There has been no traumatisms or prolapse of iris while it has been worn, excepting in one of Dr. Webster's, and in this case it was taken off at the end of twenty hours, as the woman was nervous and thought the shield might have something to do with it.

In thirty hours afterward the bandage was removed for the first time. Wound found opened and iris prolapsed. Here it is impossible to tell whether this prolapse occurred before or after the removal of the shield. One of Dr. Pomeroy's cases wilfully tore off the shield and dressings on the fourth night, though no injury was found the next morning. As he was unruly it was advised to leave off the shield, fearing he might hurt his eye. The next night he again tore off the bandage and cotton. A prolapse was found. One of Dr. Webster's cases hurt his eye on the fifth night, while the shield was off.

Only two cases have objected to wearing it, while several have expressed a desire to have it on, when assured they were less liable to injury. One lady, especially, a patient of Dr. Roosa, expressed herself as being unable to sleep without it was on, for fear of injuring her eye.

A private case of Dr. Webster's forgot to replace it on the tenth night, when she accidentally ran her finger in her eye, though doing but little damage; replaced the shield, and expressed herself to the doctor that it was "a great invention."

The shield is very light in weight, applicable to any face, fits neatly and comfortably around the orbit, easily kept aseptic, and if struck the force is conveyed to the bony orbit. It is simple in structure, made of German silver wire, nickeled, oval in shape, with the convexity outward.

The base wire is one-fourteenth of an inch in diameter, and balance one-half that size. The tapes should be kept neatly tied as shown, and united at the junction behind with small safety-pins. The eight rafters which are neatly soldered at equal distance on the base, convexing, then uniting at the apex with the rings soldered at equal distance on these at right angles, as shown, make the shield a safe protection to the eye from even hard knocks, and it can be worn while either eye is bandaged, allowing the patient to see through the meshes with the fellow-eye. The cotton can be retained in the concavity of the shield and bandage—or adhesive strips which are used by a few to retain the cotton, can be dispensed with. I advise the shield to be worn from the tenth to the twelfth day, especially at night, as less vigilance may account for the greater number of accidents after the first two or three days.

Dr. Prout, of Brooklyn, has introduced as a shield a light piece of wire gauze, about four by eight, to be applied over the bandage. It seems the least tap or pressure on it would convey the force through the dressing to the eye, therefore thwart its good intentions.

Dr. Frothingham has produced a mask which seems a good protection if it will be retained by the patient. It is heavy and bulky, and will not be retained long enough, I am told.

From past experience, it seems the conservative ophthalmic surgeon ought to insist on the protective vigilance from external violence until the eye is out of danger.

MANHATTAN EYE AND EAR HOSPITAL, NEW YORK.

[1] Presented by invitation to the New York Ophthalmological Society, at their regular meeting, November 14, 1892.

Patent Medicines in Great Britain.—The British must be great consumers of patent medicines, for during the past year the revenue derived from the three-halfpenny stamp upon patent medicines amounted to $1,200,000. Licenses for the sale of patent medicines have increased 1,340 in England and 111 in Scotland.

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CHOLECYSTO-INTESTINAL, GASTRO-INTESTINAL, ENTERO-INTESTINAL ANASTOMOSIS, AND APPROXIMATION WITHOUT SUTURES. (ORIGINAL RESEARCH.)*

BY J. B. MURPHY, M.D.,

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MR. PRESIDENT AND GENTLEMEN: Intestinal surgery occupies a very advanced place in the category of great surgical questions of the present day. Medical literature teems with reports of successful cases operated on, and not a few of the disasters are also placed on record. All over the world investigators are trying to solve the many perplexing problems that accident and disease of the gastro-intestinal tract present to them for consideration. That this subject has had such exhaustive consideration during the last decade, and that it is still a theme for spirited controversy and discussion, carries with it the implication that many vital points are yet unsettled and need further investigation, experimental and clinical. The results of experiments on lower animals have been conducive to great improvement, both in principle and technique of treatment of intestinal lesions in the human subject. Fair results are obtained in the treatment of bullet wounds of the intestines at present. At least an effort is made by the surgeon to repair the injury.

The question above all others on which the profession is divided is, "What are the best means and methods of producing agglutination of surfaces and preventing subsequent contraction at the point of adhesion?" If means can be devised—1, to hold the surfaces in contact; 2, while in contact, to produce a speedy and permanent adhesion of the surfaces; 3, to keep an opening sufficiently large for the free passage of intestinal contents; 4, to produce, as a result, a cicatrix that will not contract to any great extent, and by the contraction produce complete or partial obstruction—we will have overcome the great barriers that still remain between us and ideal success in intestinal surgery.

The marvellous ingenuity displayed in plans devised for intestinal approximation and anastomosis is worthy of the greatest success, and that success would have been realized were it not that some of the following complications occurred: "The suture was imperfectly applied; the bowel sloughed through at line of suture; the induced invagination increased after the operation until complete obstruction was produced; openings in the bone-plates and disks were not in apposition; the ends of the bone-plates caused pressure, atrophy, and perforation; the catgut sutures were too rapidly absorbed; lastly, and with appalling frequency, prolonged operation produced fatal shock," and many other well-known obstacles, not necessary to mention here, intervened

To overcome these obstacles and thus lessen the risk to the life of the patient, I have devised a mechanical means to dispense with the need of sutures, the necessity of invagination, the possibility of non-apposition, the sloughing through of disks, the digestion of the catgut, the almost insurmountable difficulties of technique of operation, the prolonged and fatal exposure of the abdominal contents, and the protracted anæsthesia. How much I have accomplished by my labor I desire you to be the judges, after I have demonstrated to you the results of my experiments, and performed for you a gastro-enterostomy and an end-to-end approximation of intestine by means of the device I here present to you, to be known as the Anastomosis Button.

The buttons are made in three sizes. A button consists of two small circular bowls (Fig. 1); size No. 2 measures as follows: Diameter, 23 mm.; depth, 8 mm. There is "sweated" into a circular opening, 12 mm. in diameter, at the bottom of one bowl, a cylinder 15 mm. in length, with female screw thread on its entire inner surface. The cylinder extends perpendicularly from bottom of bowl. There is an opening in the male bowl in which is "sweated" a similar and smaller cylinder of a size to easily slip into the female cylinder. There are two brass springs soldered on either side of the inner surface of the

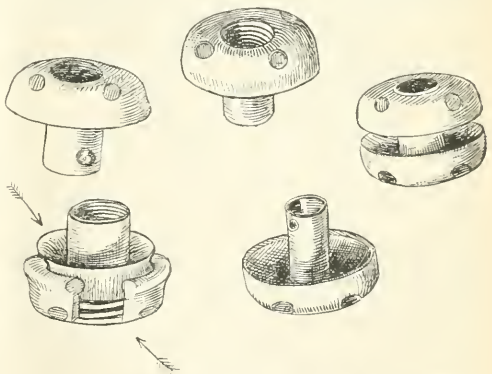


FIG. 1.—Appearance of Button with and without Spring-up Attachment.

lower end of the male cylinder, which extend almost to the top, where small points of them protrude through openings in the cylinder; these points are designed to catch the screw-thread, when the male cylinder is pressed into the female cylinder, and thus hold the bowls together at any point desired. To separate them again they are simply unscrewed. A small brass ring, with a thin though not cutting edge, to which is attached a wire spring, is placed in the male bowl and retained in position, projecting one-eighth of an inch above the edge of the bowl. This is held up by the wire spring, and is there for the purpose of keeping up continuous pressure until the entire tissue between the edges of the bowls is cut off. This spring attachment is absolutely necessary only when the stomach is operated on. There are four openings, 5 mm. in diameter, in the side of each bowl, for the purpose of drainage. By this, it will be seen, we have two hemispherical bodies held together by invaginating cylinders (Fig. 1). These hemispheres of the button are inserted in slits or ends of the viscera to be operated on. A running thread is placed around the slit in the viscus, so that when it is tied it will draw the cut edges within the clasp of the bowl. A similar running thread

* Read before the Mississippi Valley Medical Association, October 15, 1892.

is applied to the slit in the viscus into which the other half of the button is inserted, and the bowls are then pressed together. The pressure atrophy at the edge of the bowl is produced by the brass ring supported by the wire spring. The opening left after the button has liberated itself is the size of the button.

This differs from all other previous devices in the following particulars or combinations thereof: 1, It retains its position automatically; 2, it is entirely independent of sutures; 3, it produces a pressure atrophy and adhesion of surfaces at the line of atrophy; 4, it insures a perfect apposition of surfaces without the danger of displacement; 5, it is applicable to the lateral as well as to the end-to-end approximation; 6, it produces a linear cicatrix and thus insures a minimum of contraction; and 7, in the extreme simplicity of its technique, which makes it a specially safe instrument in the hands of the everyday practitioner as well as the more dexterous specialist. We will now consider its application.

Cholecysto-Enterostomy. *Gall-bladder and Intestinal Fistula—Gall-bladder and Intestinal Anastomosis.*—The idea of this operation was suggested by nature in establishing pathologically a fistula between the gall-bladder and the intestine. In this way the surgeon was guided to the best means of relief where an occlusion of the duct was produced by the pressure of an impacted concrement, a neoplasm, a cicatricial band, or any pathological lesion which would render the common duct impervious. While nature had thus blazed the way, surgeons were slow to take advantage of its suggestion. The first one to advise this method was my late lamented friend, von Nussbaum, of Munich, 1880. He expressed himself in the following words: "When the escape of gall through the natural duct is no more possible, the question arises if we cannot make an artificial connection between the gall bladder and intestine through which the gall can again escape into the intestinal tract," etc.[1]

The first to work out a feasible plan for the attainment of this ideal result was von Winiwarter.[2] Between the 20th of July, 1880, and the 14th of November, 1881, he had under his care a man, with occlusion of the ductus choledochus, on which he operated six different times, and finally succeeded in establishing a fistula between the colon and the gall-bladder, after sixteen months of labor. His original plan was to perform the operation in two sittings, but all sorts of difficulties beset his way. It is wonderful what energy and persistence both the operator and patient showed to overcome all impediments. After the publication of his most difficult task it was six years and a half before a surgeon was found who had the courage to undertake a similar operation, when Kappeler[3] undertook to follow in the footsteps of Winiwarter, but to do the operation in one sitting.

In the meantime there were several experiments made on animals, with the hope of discovering a means of making a communication between the gall-bladder and the intestine at one sitting. Gaston, in 1883, experimented on five dogs, with elastic suture, which was so placed as to approximate the gall-bladder and intestine, and around this a row of serous sutures to protect the peritoneum. He hoped by the elastic pressure to produce an atrophy and establish a fistula. The results were unfavorable. In one the sutures sloughed through; two ended in peritonitis; one in abscess between coils of intestine—here the ligature sloughed through into the gall-bladder, and left but an extremely small opening; and in one, at the end of the eleventh day, there was found sufficient adhesion and the fistula was established, the ligature being found in the intestine. In 1884 he used a similar ligature on a young dog, in the same manner, with a good result. In 1886 he made several similar experiments, with the addition of ligating the common duct, but the dogs only lived a few days, dying of extensive gall-infiltration in the liver.

G. Harley suggested the approximation with the formation of fistula from the gall-bladder to the intestine by means of sutures and caustic potash. He arranged a number of sutures in a small circle, about the size of a dollar, holding the gall-bladder to the bowel, but before completing the circle mentioned, cauterized the centre with caustic potash, then completed the circle with sutures, and in that way hoped to produce a fistula of the gall-bladder and have an adhesion by plastic exudation surrounding it. He claims to have had good success in animals.

Colzi, in 1883, put in a similar circle of sutures as Harley, but before the final suture made an incision in the centre into the gall-bladder and duodenum, also ligating the choledochus. The animals tolerated the operation without any apparent disturbance in the digestive functions.

De Page, in 1887, performed the same experiment as Colzi, on three dogs, without ligating the choledochus. In one the suture sloughed through; another died of peritonitis; the third was killed at the end of six weeks and showed an atrophy of the gall-bladder, but no fistula.

Finally, Dastre,[4] in his communication to the Physiological Congress at Basel, in 1889, published his experiments, wherein he succeeded in uniting the gall-bladder to the intestine for the purpose of studying what effect it would have on digestion. Of this I will speak later.

So that we see to the date above mentioned experiments represented three different types: 1st, The formation of fistula by chemical destruction; 2d, by pressure atrophy—the elastic ligature; 3d, careful suturing, with subsequent incision within the circle produced by the sutures.

Up to July, 1890, there were nine "one sitting" operations performed tor the establishment of a gall-bladder and intestinal fistula in the human subject; the first by Monastyrski, May 4, 1887.[5] The incised gall-bladder and jejunum were approximated by two rows of sutures in serous coat. The patient died on August 4th. The fistula was found patulous. Second, Kappeler,[3] on July 6, 1887, after incision of gall-bladder and duodenum, approximated with a suture of serous and mucous coats, after the method of Woelfler—recovery. Third, Socin,[6] on November 19, 1887, after incision of gall-bladder and intestine, united them with sutures of mucous and serous coats—recovery. Fourth, Fritzsche,[7] on April 24, 1888, operated for impaction of gall-stone in choledochus, united incision of gall-bladder and intestine with catgut sutures of mucous coat and silk sutures of serous coat. Patient died on May 4th. Large amount of blood in peritoneal cavity. Fifth, M. Robson,[8] on March 2, 1889, after incision of gall-bladder and colon, united mucous and serous coats with chromicized catgut sutures—recovery. Sixth, Terrier,[9] August 13, 1889, after incision of gall-bladder and duodenum, approximated with two rows of sutures, put in drainage-tube, and sutured the gall-bladder to abdominal wound—recovery. Seventh, Courvoisier,[1] March 28, 1890, secured a portion of the gall-bladder, and with serous sutures approximated it to the colon, after having made a ductotomy of choledochus and removed several stones with curette from the ductus hepaticus—recovery.

The priority of the operation certainly belongs to Monastyrski, for he performed his operation about a month before Kappeler, but did not publish it until eleven months after the operation. Of the seven operations performed, four were for carcinoma of the head of the pancreas, one for carcinoma of the duct at its orifice, and two were for impaction of gall stones—those of Terrier and Courvoisier. The technique in all of the above operations was somewhat similar, the suture being used as the means of approximation, Terrier using a rubber tube to keep the opening patulous, which was passed on the eighth day. The seat of the operation in Terrier's case was the duodenum; in Monastyrski's, the jejunum, 2 m. below the duodenum; in Kappeler's, 226 ctm. above the cæcum; in Fritzsche's case 3 m. below the pylorus.

There remain the cases of Bardenheuer,[11] who per-

formed two operations where he united the gall-bladder to the duodenum with an elastic suture in the centre and a single row of silk sutures around it, expecting that the elastic suture would produce a pressure atrophy, and that a fistula would remain. The first case—impacted gall-stone—terminated fatally at the end of four weeks, and the fistula was not yet established, nor had the gall-bladder adhered to the intestine, a biliary fistula opening into peritoneal cavity. The second, he writes to Terrier, was done in the same way, with the same result. To this list, taken from Courvoisier, may be added two by Czerny,[10] of whom one died of hemorrhage and the other survived the operation, and my two, of which I will speak later, making, up to date, in all, thirteen cases of cholecysto-enterostomy. Of these four died as the result of operation—Fritzsche's, two of Bardenheuer, and one of Czerny; five died as a result of the malignant diseases from which they were suffering; and four survived—Terrier's, Courvoisier's, and two of mine.

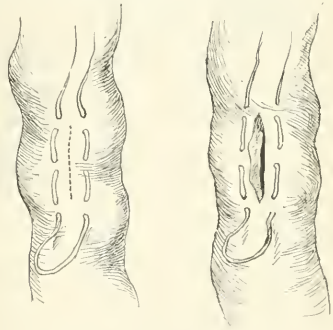
Since writing the above I find a case reported, July 3, 1892, by Dr. E. Lambotte, of Schaerbeek, Belgium,[13] in which he had an external biliary fistula following cholecystostomy. He drew out a piece of the colon through an incision in the abdomen close to the fistula, and then applied Dupuytren's enterotrite in the manner that that author used it for the repair of an artificial anus, finally performing a plastic operation to close the external opening in all three operations. The patient survived the very tedious operative procedures. This case does not belong with the class of "one sitting" operations. Also, a case by Korte, reported to the Berlin Medical Society, May 27, 1891, in which the suture was used for approximation.

The various operators, in commenting on the technique of the operation, all agree that it is one of extreme difficulty; and, while the experience of the others is not as trying as that of Winiwarter, it was always most difficult of performance and occupied an hour or upward to complete the operation.

While reading of the great difficulties experienced by the operators mentioned in performing this operation, I realized that the profession was sorely in need of some more simple and perfect means for the approximation of the gall bladder and the intestine; and, after trying several devices, I succeeded in producing and perfecting this anastomosis button, which I think fulfils all of the indications. The button is inserted in the following manner:

An incision is made from the edge of the rib, two inches to the right of, and parallel to, the median line, extending downward three inches. The gall-bladder is drawn into the wound, also the duodenum. The duodenum is cleared of its contents by gentle pressure with finger. My short intestinal compression forceps are placed upon the duodenum to prevent the escape of gas and fluids after the incision is made. A needle with fifteen inches of silk thread is inserted in the duodenum, directly opposite its mesentery and at a point near the head of the pancreas. A stitch is taken through the entire wall of bowel, one-third the length of the incision to be made. The needle is again inserted one-third the length of the incision from its outlet, in a line with the first, and brought out again, embracing the same amount of tissue as the first (Fig. 3). A loop three inches long is held here, and the needle is inserted in a similar manner, making two stitches, parallel to the first, in the reverse direction, and one-eighth of an inch from it, coming out at a point near the original insertion of the needle (Fig. 2). This forms a running thread, which, when tightened, draws the incised edge of the bowel within the cup of the button. In the gall-bladder a similar running thread is inserted. An incision is now made in the intestine, two-thirds the length of the diameter of the button used. The button is slipped in, as I will show you in my demonstration, the running string tied, and the button held with the forceps. The contents of the gall bladder are withdrawn with an aspirator. An incision is then made in the gall-bladder the same length, and between the rows of sutures, the button is inserted in a similar manner, and the running string tied. The serous surfaces to be approximated are scraped with the edge of a scalpel. The forceps are removed and the button is held between the fingers and pressed together (Fig. 4). A sufficient degree of pressure must be used to bring the serous surfaces of the gall-bladder and intestine firmly in contact and compress the tissues. The elastic pressure of the spring cup of the button produces a pressure atrophy of the tissue embraced within the cup, and leaves an opening as large as the button, the button dropping into the bowel and being passed through the intestines.

It takes about as long to describe the operation as to perform it. The time occupied with the first lady on whom I operated was eleven minutes, from the entering of the peritoneal cavity until the closing of the same. On dogs I was from eleven to eighteen minutes in performing the operation, the latter time being on the first dog, before I had made the various improvements in the technique and button. The operation is more difficult to perform on the dog than on man, as it is more difficult to bring the gall-bladder into the wound.



FIGS. 2 and 3.—Showing Running Thread before and after Incision in Bowel.

To show that this operation is one that the busy surgeon will be frequently called upon to perform, now that the technique is so simple, I have only to remind you of the number of cases of chronic jaundice from obstruction to the common gall duct, requiring some operation for relief, and to draw your attention to the defects of the operations now in vogue, namely, the unpleasant and sometimes dangerous sequence of cholecystostomy, an external biliary fistula, which may of itself be a menace to life, and require a second operation even more critical than the first, as is shown in the following reports by Courvoisier; also the difficulties and dangers of cholecystectomy.

The effect of a permanent fistula of the gall-bladder and constant escape of bile secreted, as frequently follows cholecystostomy, is different, depending, first, on the quantity of bile that escapes from the opening, and, second, what proportion is admitted into the intestinal tract. This fact has been lost sight of by many of the surgeons that have operated, and had an external fistula remain, which accounts for the great differences of opinion as to gravity of biliary fistula. Where the fistula of the gall-bladder only allows a portion of the bile to escape, the patient and animal, as in Dastre's experiments, can live without suffering from the loss; that is, they are capable of digesting with a much smaller quantity of bile than they naturally excrete. But if we let the entire quantity of bile escape through a fistula, the patient soon succumbs. This is thoroughly demonstrated by the twelve cases collected by Courvoisier.[1] In one of these cases, reported by Krumptmann,[12] the average daily quantity of bile escaping through a fistula was 230

gm.; still the patient lived eight years in this condition. Where such an able authority as Courvoisier classes this with his cases in which there was an escape of the entire quantity of bile, it may appear presumptuous to question the propriety of placing it in that class; but as the quantity is so much below the average given by physiologists, and as the effect on the patient was at such variance with the more reliable cases, I must ask you to analyze it. For example, some estimates of the quantity daily excreted are—by Wittich, 532 c.c.; by Westphalen, 453 to 266 gm.; Ranke, 652 c.c.; Murchison, 40 ounces. When compared with that given by Krumptmann, we are certainly justified in doubting its reliability, and in not placing it with unquestionable cases. All patients died where the entire quantity of bile secreted escaped through the fistula, and where a large quantity escaped the patients became emaciated and sick. Therefore a safe means of allowing the gall to re-enter the intestine should be welcomed by the surgeon and patient. This operation will produce the same revolution and favorable change in the surgery of the gall bladder that the intra-abdominal treatment of pedicles did in the treatment of tumors of the uterus and its appendages.

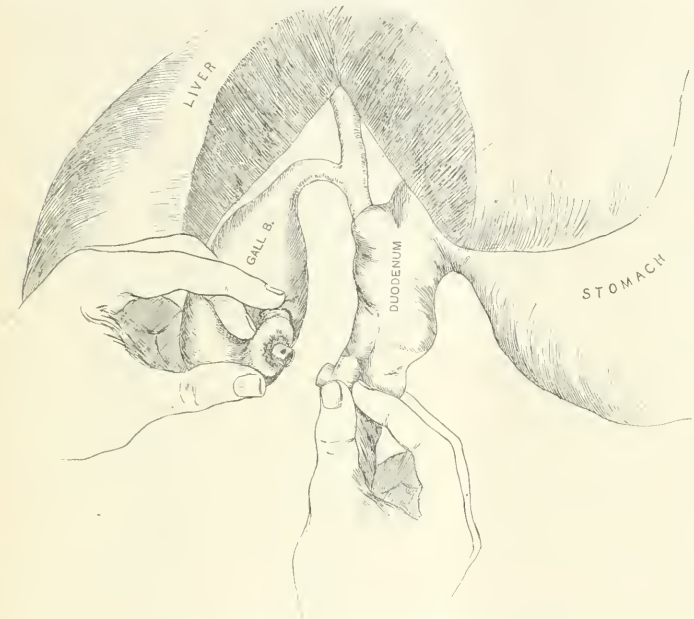


Fig. 4.—Button as Held when Pressed Together Performing Cholecysto-enterostomy.

The following experiments were performed on the gall-bladder:

Experiment 4.—June 5, 1892; male dog, weight 70 pounds. Abdomen shaved, incision three inches long, in the median line. The duodenum was easily reached—as it passes from the end of the stomach close to the liver—and brought into the wound; the gall-bladder was also drawn forward and held with the forceps. The incision was made in the gall-bladder and one-half the button inserted; a running thread was placed around the circumference of the opening, and the thread tied; the gall bladder was allowed to recede. An incision was made into the duodenum, parallel to the bowel, opposite its mesentery, large enough to admit the button. A running thread was sewed into the edge of the incision, one half of the button inserted, and the running thread tied. The button was pressed together. The approximation was perfect; time, eighteen minutes. The dog had no unpleasant symptoms until the third day, when he appeared sick and refused to drink. On the fifth day he was much improved, and on the sixth he had completely recovered; he was playful as if nothing had happened to him. On July 10th, thirty-five days after the operation, he was killed. The button had escaped, and the opening was found large enough to admit the little finger from the gall-bladder into the intestine (Fig. 5). There was no food or hair in the gall-bladder, as a valve was formed on the intestinal side of the opening by two folds of the mucous membrane closing over it, permitting the bile to flow out, but preventing the entrance of anything from the intestine. This valve (Fig. 5) could not have been more perfect had it been prearranged. The gall-bladder was very much contracted. You can examine the result in specimen.

Experiment 5.—June 12, 1892; black male hound, weight 55 pounds. Operation performed the same as in Experiment 4. Some bile escaped into the peritoneal cavity. The attachment of the gall-bladder to the liver was torn slightly in the effort to bring it further forward into the opening. The button worked admirably. Time, sixteen minutes. The dog did not suffer in the least after the operation, being playful and able to eat at all times. August 22d he was killed. A perfect union was found between gall-bladder and duodenum. The gall-bladder had contracted to about the size of the common duct. The opening between intestine and gall-bladder would admit the end of the little finger. A valve similar to that described in Experiment 4 was found. Neither hair nor food was found in the gall-bladder.

Fig. 5.—Opening with Valve, after Cholecysto-enterostomy, on Intestinal Side.

Experiment 7.—June 14, 1892; St. Bernard, female, weight 100 pounds. Cholecysto-gastrostomy, operated in the same manner as in Experiment 4, only using the stomach in place of the intestine. No escape of bile or gastric fluid into the abdominal cavity. A little difficulty experienced in approximating the ends of the button on

account of the thickness of the wall of the stomach. Time, seventeen minutes. Dog sick the following day, would not eat or play. On the 17th all symptoms had disappeared. August 9th, killed dog; found gall-bladder firmly united to the stomach; little finger could be inserted into the stomach from the gall-bladder (Fig. 6); there was neither food nor hair in the gall-bladder, which was somewhat contracted. No cholecystitis nor cholangitis. The dog did not seem to suffer any inconvenience from the gall passing into stomach.

FIG. 6.—Opening in Stomach after Cholecysto-gastrostomy.

Experiment 13.—July 7, 1892; black dog, weight 65 pounds. Cholecysto-enterostomy. The gall-bladder was brought into the opening without lacerating its attachment to the liver, and the running thread inserted; operation completed as above. Some escape of gall into the peritoneal cavity. Time, sixteen minutes. Killed dog, August 23d; found the gall-bladder contracted to a tube not much larger than the ductus cysticus; opening into intestine admitted the little finger. Valve formed by fold of intestinal mucous membrane. Water would flow freely from the side of the gall-bladder into the bowel, but would not flow from the bowel into the gall-bladder on account of this valve. Neither hair nor food in the gall-bladder.

Experiment 18.—August 2, 1892; white female dog, weight 95 pounds. Cholecysto-enterostomy; ligature of common duct; operation otherwise as above. Time, eleven minutes. Result examined August 6th. Found a perfect adhesion of gall-bladder to bowel; button in position. Hair and food in gall-bladder.

Experiment 21.—August 30, 1892; red and white hound, weight 90 pounds. Cholecysto-enterostomy. Time, fourteen minutes. No difficulty experienced; the dog had no unpleasant symptoms following. Killed on September 14th; found perfect union of gall-bladder to bowel. Partial atrophy of tissue in clasp of button; button in position; hair and food in gall-bladder; gall-bladder about the normal size. This dog was killed thus early to find what changes would take place in fourteen days.

Report of Cases.—CASE I.—A. Q——, aged thirty-five, female; admitted to the medical department of Cook County Hospital, May 27, 1892. Transferred to the surgical division of the hospital, June 10, 1892, and came under my care. Gave the following history: During the last fifteen years has had stomach troubles; pain and tenderness in the epigastrium; the attack would last from two to four days, was almost always accompanied by vomiting, never by jaundice. Had pain in back since child birth; suffered from chronic constipation. One of these attacks was accompanied by jaundice for the first time, December 14, 1891. At that time had constant and intense pain for twelve hours, and an aching pain and tenderness in the epigastrium for two months following it. Jaundice cleared in about two months. During the past few months the attack of stomach trouble would last from twelve to twenty-four hours. In February the present attack began, accompanied by jaundice and severe pruritus, which has been constant from that time up to date. These symptoms increased in severity up to the time she was admitted into the hospital. While in the medical department her jaundice was constant; her mental condition became very much impaired and her emaciation rapidly increased.

Condition when Admitted to the Surgical Department.—The patient intensely jaundiced; very much emaciated; has a point of tenderness in the right hypochondriac region just below the margin of the rib; no tumor to be felt. The urine contains a large quantity of bile, no albumin. The patient suffers from considerable mental derangement, very slight elevation of temperature.

June 11th.—I decided to perform cholecysto-enterostomy by means of my anastomosis button, which I had used for the first time on a dog six days previous. An incision three inches long was made, three inches to the right of the median line, extending directly downward. The gall-bladder was found distended, non-adherent, and contained a large number of small calculi. Duodenum and gall-bladder were both drawn into the wound; an incision was made in the duodenum and half of the button inserted. A running thread was put in the gall-bladder, an incision made, and the other half of the button inserted. The gall-stones were not removed. There was considerable escape of gall, as gall-bladder was not aspirated before putting in the button. The button was then pressed together without any difficulty, and the mass dropped into the abdominal cavity. Time from the opening of the peritoneum until the closing of same, eleven minutes. After the operation the patient showed no unpleasant symptoms; temperature at no time exceeded 100° F., and in fourteen days from the operation she was allowed to walk about the ward. The jaundice rapidly disappeared, and three weeks after the operation there was no trace of bile in the urine. The patient was of a very hysterical temperament after her mental condition improved; she noticed that she was an object for observation and became so erratic that we could not control her at the hospital and were compelled to discharge her five weeks after the operation. Up to that time she states that "she has not passed the button." She was appearently well in every particular.

October 28th.—Patient was examined by Dr. H. R. Wittwer. He found the jaundice had not returned; there was no bile in the urine, and the patient was in excellent health. He could not ascertain whether she had passed the button or not.

The following case was referred to me by Dr. Hoelscher, who with Drs. Wiener and Lee assisted me in the operation.

CASE II.—Mrs. B——, aged thirty eight, widow, has three children. Parents still alive, aged seventy-six and seventy-four respectively. Brothers and sisters well; no history of any hereditary disease.

Dr. Hoelscher saw the patient for the first time October 7, 1892, and found her as follows: "Healthy, well nourished appearance; pain of sudden onset in the epigastric region, and from this point it gradually extended over the whole abdomen. She had vomited the contents of the stomach and some bile on two occasions after the seizure with pain. Bowels were constipated and had been in this condition two or three days before the seizure. Vesical tenesmus and diminished quantity of urine. Gave no history of any previous pain, gastric disturbance, jaundice, or colics."

On examination found a tumor in right hypochondriac region, extending downward into the iliac region and terminating in a rounded smooth end; could be distinctly felt in lumbar region, was movable and tender on pressure; there appeared to be a deep fissure between the tumor and the liver, no fluctuation apparent, bowel or colon not overlying the tumor. The diagnosis could not be determined, but it was presumed to be some lesion of the kidney, so it was decided to make an exploratory laparotomy.

October 19th.—I made an incision three inches long, from the edge of the tenth rib directly downward toward the border of the ilium. The tumor was exposed and found to be a very much enlarged gall-bladder with large calculi within. The viscus was very œdematous, red, and thickened. It was decided to make a cholecysto-enterostomy with my anastomosis button (No. 2). The gall-bladder was aspirated, and the running thread inserted. The running thread was then inserted into the duodenum and the intestine incised and the male half of the button inserted, the female half was then inserted in the gall-bladder through a slit made between the running thread, and the button closed. The gall-bladder measured at least 1 ctm. in thickness and was very œdematous. There was no difficulty in inserting the button. The gall-stones were allowed to remain, as I do not consider it necessary to remove them unless they are larger than the button. They will pass out after the button escapes.

October 20th.—Temperature, 101° F; pulse, 96. Vomited considerably during the night and complained of headache, which seemed to be effects of the anæsthetic. There was no pain nor abdominal tenderness.

October 21st.—At 5 P.M. yesterday the vomiting ceased, and the patient is feeling very well this morning.

October 27th.—The patient has had no unpleasant symptoms since October 20th. This morning in the stool were found two large gall-stones. The larger one weighed 117 grains (7.8 gm.); its longest diameter 1 inch, its shortest $\frac{7}{8}$ inch. The second stone 102 grains (6.8 gm.); its longest diameter $\frac{7}{8}$ inch, its shortest $\frac{3}{4}$ inch. It will be noticed that the shortest diameter of the larger stone measures exactly the same as the diameter of button used. The patient is feeling very well and is sitting up in bed. Complete primary union. Button passed eighteen days after operation.

Case III. *Cholecysto-enterostomy with Button No.* 1. —This case was referred to me by Dr. J. H. Hoelscher, who gave me the following history: Mrs. Z——, aged thirty-six, married, six children. Enjoyed perfect health until twenty-two years of age; at that time, three months after childbirth, had an attack, of short duration, of severe epigastric pain and vomiting. It was not accompanied or followed by jaundice. Ever since that attack she has had digestive disturbances, as distress following certain kinds of food, eructations of gas, constipation, loss of appetite. Four years ago she had a similar attack of pain in the epigastrium, accompanied by vomiting. From that time on the pain returned every five or six weeks, up to five months ago, when she noticed a constant aching pain and tenderness in the right hypochondriac region, that persisted until the present time. The pain and soreness were very much increased after working in a stooping posture. She has suffered much from general debility, and complains of slight and frequent chills. Throughout the entire progress of her disease jaundice was never present. The urine was tested several times for her with negative results. She does not give a distinct history of having had "hepatic colic." About three months ago she found small particles, the size of mustard-seeds, in the fæces, which someone told her were gall-stones. There is no positive evidence that she ever passed a gall-stone. Physical examination revealed a heart and lungs normal; liver not increased in size. Manipulation reveals a pear-shaped, hard tumor in the region of the gall-bladder, measuring about three inches in length, and two in width. It moves synchronously with the diaphragm in respiration. On pressure considerable pain is produced, and a slight crackling sensation is felt by the fingers.

It can be separated from the kidney, and can be moved considerably from side to side. The diagnosis of gall-stone was made by Dr. Hoelscher, and the case was referred to me for operation.

Operation, November 23, 1892, assisted by Drs. Hoelscher and Lee, in the presence of Dr. Nicholas Senn, who expressed a desire to see my method used, Dr. Dunne, of Minneapolis, and Dr. Mayo, of Rochester, Minn. The incision was made the same as in Case II.; contracted gall-bladder packed full of gall-stones slipped into the wound.

A little difficulty was experienced in drawing the duodenum forward, as some old adhesions existed. The running threads were inserted in gall-bladder and duodenum; male half of button placed in duodenum, and held by an assistant. An incision was made in the gall-bladder, which was found so full of gall-stones that half of the button could not be inserted without removing some of them. A dozen were quickly picked out with the dissecting forceps. About twice as many were allowed to remain. The female half of the button was inserted in the gall-bladder and the running thread tied. Button pressed together. Toilet of field of operation was made with dry sponge and the viscera dropped back into abdomen. Deep and superficial layer of sutures in abdominal wall. Time for entire operation, twenty-one minutes. The time for inserting the button was not taken. Patient rallied rapidly from the anæsthetic. Pulse after operation, 70. Temperature normal. Neither nausea nor vomiting.

November 25th.—Pulse, 78. Temperature, 100.5° F. Patient complains of slight pain at seat of operation. No tympanites nor abdominal tenderness.

November 28th.—Patient expresses herself as feeling very well. At no time since the operation has patient's temperature exceeded 100.5° F. She is allowed to take a quantity of liquid nourishment, but not sufficient to satisfy the appetite. I consider her now out of danger. The ease and rapidity with which this operation was performed satisfied those who witnessed it, as well as myself, that the operation of cholecysto-enterostomy by this means is relieved of many of its dangers and all of its difficulties. Dr. Hoelscher is to be congratulated on his diagnosis in this case, in the absence of so many important symptoms.

Gastro-Enterostomy.—The frequency of diseases of the pylorus and its surroundings which produce an occlusion, partial or complete, of that orifice, causes the surgeon to be frequently called upon for the relief of the unpleasant and dangerous symptoms arising therefrom. As the diseases themselves are frequently of a malignant character, or of such a nature as to be irremovable, we can only hope to relieve the patient of the unpleasant symptom of vomiting, and prevent him from dying of starvation. This operation, by which the intestine and stomach are approximated and an opening for the passage of food is made, is known as gastro-enterostomy.

The difficulty of establishing this opening by means of sutures has deterred the majority of surgeons from operating, except in desperate cases where the patient preferred death to a continuance of his miserable condition, and was occasionally accommodated with the former by the operation. The time occupied and the difficulties of the technique were so great that many of the patients on whom the operation was performed succumbed from the prolonged anæsthesia and long exposure of the abdominal contents; or, surviving these, died from a defect in the sutures or slonghing through at the line of suture. Mortality before bone-plates were used (with suture), 42.8; with bone-plates, 24.5 per cent. If the surgeon had some means by which he could safely and rapidly approximate the stomach and intestine, I am sure he would often be able to respond in the affirmative to his patient's plaintive interrogatory, "Doctor, can you not do something

for this vomiting and starvation?" When the doctor has the means of performing this operation, even as an amateur, in the short space of nine minutes, and after a little practice in as low as six minutes, as I have done on the living patient; when the technique is so simple that his patient is free from the effect of the prolonged exposure of the abdominal contents, I am sure he will undertake it with pleasure and confidence; and would have no hesitancy in applying such a simple procedure to rescue his patient from such an extremely unpleasant and dangerous condition. True, in the malignant growth the disease is not cured by gastro-enterostomy, but that most unpleasant of all symptoms, the constant vomiting, is relieved, and the patient is allowed to lead a life of comparative comfort until the end is brought on by general marasmus. The following experiments were made:

Experiment 16.—July 27, 1892. Black hound, same as in Experiment 9; weight 55 pounds. An incision in the linea alba from the xiphoid cartilage extending down three inches. Omentum torn. The under surface of the stomach was exposed and drawn into the wound with the fingers. A loop of jejunum from the neighborhood of the left kidney was also drawn into the wound. The running threads were inserted in the stomach and bowel. The incision was first made in the stomach, and male portion of the button inserted, the running thread tied and cut short. The button was now pressed together, a perfect approximation being produced. The mass dropped back into the abdominal cavity. Time, fourteen minutes. July 28th, dog appeared in perfect health; not the least unpleasant symptom; playful, and ate as usual. August 23d, dog killed; found perfect union of stomach and intestine. The tissue clasped within the button did not completely slough, and the button was held in position. The reason the tissue did not slough was on account of the thickness of the walls of the stomach. After a certain degree of atrophy had taken place pressure ceased, and there was sufficient tissue retained between the edges of the button to keep up the circulation in tissue within clasp of button. This operation was performed with the button before I had the elastic compression ring attached to it, and the fact that sloughing did not take place was what led to this modification.

Experiment 17.—July 31, 1892. Brown female dog, weight 22 pounds. Gastro-enterostomy. The duodenum was joined to the stomach near the head of the pancreas. No gastric fluid nor gases escaped during the operation. The button was inserted as above; no omental flap; two rows of sutures in the abdominal wall. The dog showed no unpleasant symptoms after the operation. Time, fourteen minutes. August 9th, killed dog; found a perfect union of duodenum and stomach; button yet in position, as shown in specimen. The dog was killed thus early to ascertain the degree of atrophy at end of ten days.

Experiment 20.—August 23, 1892. Brown female, weight 100 pounds. Gastro-enterostomy. Performed in my laboratory by Dr. Alex C. Wiener. The under surface of the stomach was exposed as above, the duodenum brought forward, the button inserted and compressed. Time, twelve minutes. The dog showed no unpleasant symptoms after the operation, eating and drinking as usual, and very playful. September 7th, fifteen days after the operation, found perfect union of stomach and bowel; button still in position; partial atrophy of tissue clasped within it.

Experiment 23.—August 30, 1892. Woolly female, weight 70 pounds. Gastro-enterostomy. Performed in my laboratory by Dr. C. Fenger. Method of operation same as above. Time, nine minutes. A new button was used in this operation, and the degree of pressure greater than in the previous ones. Dog died on the third day. It was found on post-mortem examination that the manufacturer, in his endeavor to make the button light, had made the rim of bowl at one place so thin that it had a cutting edge, and it cut completely through the wall of the stomach and bowel at the time of operation. A similar button was used in another case with the same result.

I performed the operation of gastro-enterostomy three times with the button on the human subject, and Dr. Wiener did it once. In all of the cases we got a primary adhesion. I will give a detailed report of these cases in a subsequent clinical paper on the subject, which I am preparing.

Pylorectomy.—The operation for removal of the pylorus with a portion of the stomach and duodenum. The operation was first performed by Rydyger, but Billroth and Woelfler brought it most prominently before the profession. I will not go further into the history of the operation, with which you are all familiar. In performing this operation I have deviated considerably from the beaten path, and proceeded as follows:

After drawing the pylorus into the abdominal wound, ligating the greater and lesser omenta and cutting them off, I then made a circular incision with the scissors on groove director, cutting through the muscular and serous coats of the stomach down to mucous coat, completely around the stomach where it was to be excised. I then denuded the mucous membrane of its muscular and serous coats for half an inch in the direction of the pylorus. A silk ligature was placed around the mucous coat at the line of the original incision. A large compression forceps was placed on portion of stomach to be removed. The mucous membrane was cut off half an inch below the ligature. This then presented the appearance of a rosette. A puckering stitch was run all around the edge of the mucous membrane and tied. The silk ligature was then removed. An interrupted silkworm-gut suture approximated the peritoneal and muscular coats of the stomach over the corrugated stump of the mucous membrane, completely closing the end of the stomach. The duodenum was excised an inch and a half below the pylorus, a running thread was placed in position and the button inserted. The other half of the button was inserted in the posterior wall of the stomach, two inches from line of suture, in the usual way, and the button pressed together. It was found before placing the button in the duodenum that the head of the pancreas came within an inch of the pylorus, and that the bowel had to be denuded of a portion of its peritoneum by loosening the end of the pancreas in order to allow the button to be closed. This would not occur in the human subject, as the head of the pancreas is a considerable distance from the pylorus.

The advantage of this operation over the one frequently performed—that of sewing the end of the bowel in the opening made by the excision of the stomach—is, first, that there is no dead point at the angle of suture between the stomach and bowel, which has been the cause of the greatest fatality in this operation; second, the rapid and easy closure of the mucous coat; third, the assurance that there would be sufficient opening for the easy exit of the contents of the stomach during the process of healing, thus preventing tension of the sutures at the end of the stomach; fourth, advantage over the lateral approximation operation by mixing of the food with the secretions of the liver and pancreas in about their normal way, and avoiding the danger of the great contraction that follows it; fifth, the great saving of time, the operation in the usual way occupying three and one-half to four hours, while in this method it occupies about one hour; sixth, no possibility of escape of stomach contents at time of operation; seventh, that there is but very little hemorrhage. The following experiments were performed:

Experiment 30.—September 14, 1892. Black and white dog, weight 60 pounds. Pylorectomy. Ligature of greater and lesser omenta; separated the same from the pylorus. Complete circular incision was made through serous and muscular coats of stomach down to

the mucous membrane. The mucous membrane was denuded of its serous and muscular coats for half an inch from incision in direction of pylorus. Silk ligature placed embracing entire mucous layer, incised through mucous membrane, and tied. Ligature removed. Interrupted silk sutures approximated muscular and serous coats at same time. Excision of duodenum an inch and a half below pylorus. Running thread placed in bowel, and half of button put in position. It was found that the head of the pancreas had to be torn from the attachment to the bowel in order to admit of the closing of the button. Posterior wall of stomach incised, and other half of button inserted. Button pressed together, and all dropped back into the abdomen. No omental flap. Time was saved in the manner of treating the mucous membrane of the stomach, which had not hitherto been suggested. No escape of contents into abdomen. Time, forty-four minutes. Dog killed on September 27th; a considerable quantity of sero purulent fluid in abdomen; the silk sutures at the end of the stomach had suppurated; the mucous membrane was firmly united; the bowel firmly adherent to the stomach; the button in position. On one side a small sinus, leading half an inch

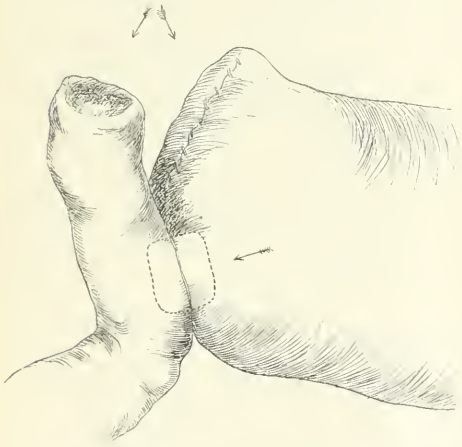


Fig. 7.—Pylorectomy. Lateral Approximation of Duodenum to Stomach.

from the edge of the bowel along the wall of the stomach was found, which had not perforated into the abdominal cavity. This sinus occurred where the end of the pancreas had been torn from the bowel.

Experiment 32.—October 2, 1892. Black dog, weight 90 pounds. Operation performed as in Experiment 30, except that the duodenum was sewed at the end with continuous silkworm-gut suture, and a lateral anastomosis made with the button between the duodenum and stomach, three inches from end of duodenum (Fig. 7). Time, sixty-two minutes. Operation made with new spring button. October 10th, the dog has been sick with the influenza from the time of the operation until October 9th, when he again began to eat. October 15th, the dog died from influenza. Autopsy showed a perfect union between stomach and bowel, with a linear cicatrix. The button had passed; the opening left was as large as the button and looked as though it had been punched out, as seen in this ideal specimen.

End-to-End Approximation of Intestine.—The many diseased conditions of the intestinal tract leading to obstruction, the many accidents resulting in strangulation and local death, the many injuries to the intestinal canal causing solution of continuity, have led to extensive study and numerous operative procedures for the purpose of restoring the bowel to its normal condition, and re-establishing the circulation of its contents. Many have been the methods that have been suggested, and still more numerous have been the modifications. This has been especially true in the last decade, and still we had not attained an ideal means of securing a perfect union. For centuries efforts had been made to unite the bowel in its most natural position, that is, end to end. More recently the tendency in experiments has been to unite it laterally. The various means hitherto used to produce apposition I will divide into two classes: first, the suture; and, second, the insertion in the bowel of a foreign body as an assistance to the suture. Of the suture I will not speak, except to call your attention to the one recently devised by Dr. M. E. Connell, of Milwaukee, which is certainly worth a trial. Foreign bodies in the shape of cylinders, both soluble and insoluble, such as the tracheæ of animals, tallow candles, sections of dried intestine, sections of elderwood, metallic rings, gelatine and rubber tubes, and very many other materials have been used. These have been tried from time to time, always in connection with the suture. Some of them have rendered good service, and still hold a respectable place as an aid to the suture in circular enterorrhaphy, as Pall's decalcified bone-tubes, Byron Robinson's rubber tube, with which he obtained good results, and still later, Jessett's ingenious device. The advantages and disadvantages of these various devices you already understand. The device which I have shown to you to-day differs from all that have been used before in the following particulars or combinations of them; first, in that it retains its position automatically when closed; second, that it produces its union independently of suture; third, that there is a perfect approximation of serous surfaces, and that that approximation must remain until a pressure atrophy takes place where the ends of the bowel are pressed together. There are precautions to be taken in putting in the running thread in the end of the bowel. If you carefully follow the lines indicated by the suture (Fig. 8), you will, 1st, prevent the eversion of the mucous membrane; and, 2d, you will produce an overlapping of both layers of the serous coat of the mesentery at point *a*, Fig. 8.

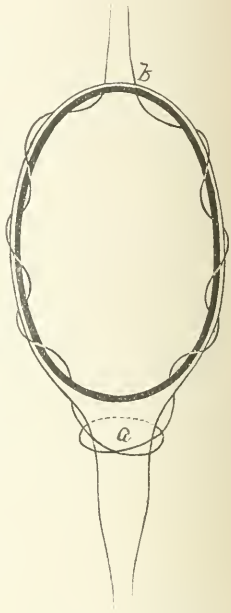


Fig. 8.—Manner of Inserting Running Thread in End of Bowel.

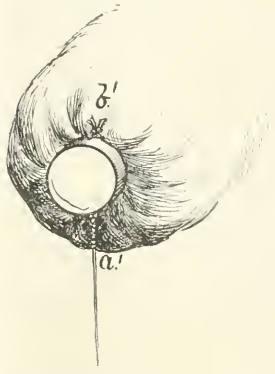


Fig. 9.—Appearance after Drawing Running Thread around Cylinder of Button.

This overlapping is produced, as you will notice in the figure, by making one top stitch at that point (*a*). This

approximation of the two peritoneal layers of the mesentery is of vital importance, as otherwise you would have the muscular layers of the bowel coming in contact between the edges of the button and get no adhesion. If the running thread is properly applied as in Fig. 8, when tied it will have the appearance of Fig. 9, and have a continuous surface of peritoneum around the entire edge of the button.

When inserting the half of the button to which the circular ring is attached, compress the ring to a level with the bowl, grasp the edge of the bowl with the forceps

Fig. 10.—Appearance of Ends of Bowel with Portions of Button Inserted Ready to Close.

and hold it compressed while you make the first half of the knot, and draw the end of the bowel close about the central cylinder; then change the forceps to the edge of the cylinder, and complete the knot. When the button was first devised it was not intended to use it for this purpose, but I find it very well adapted to intestinal approximation, as shown by the following experiments:

Experiment 12.—July 7, 1892. Brown female dog, a St. Bernard, weight 80 pounds; the same as used in Experiment 7. End-to-end approximation of ileum by

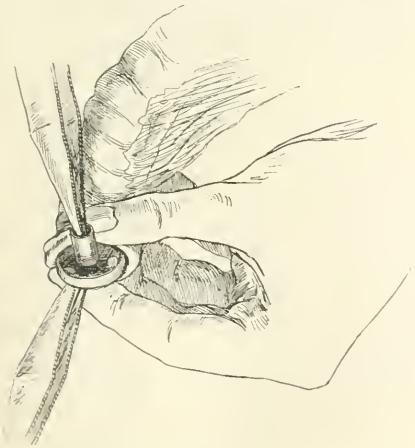


Fig. 11.—Manner of Holding Button and Bowel while Inserting Button.

means of button. The bowel was freed of its contents by gentle pressure with the fingers; it was incised; a running thread was inserted around the proximal end of the bowel, close to its edge, and the half of the button inserted (Fig. 11); the distal end was treated in like manner and the other portion of the button placed in position and the button pressed together (Fig. 12). Omental flap was placed around the point of union, and held in place by the silkworm-gut sutures. Time of operation, twelve minutes. The dog showed no unpleasant symptoms after the operation. July 27th, examined the result of this operation; while making cæcectomy on the same dog, found a perfect union between the ends of the bowel; omentum adherent all around; no adhesions between the united intestine and abdominal wall. There was no contraction of bowel at the seat of union, and it was very difficult to make out the line of approximation on the serous surface. The button had already passed. August 9th, killed dog; found the bowel as described above. There were three operations on this dog—chole-cysto-enterostomy, end-to-end approximation of the ileum, and cæcectomy, with end of small intestine approximated to end of large intestine.

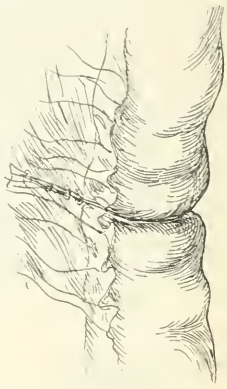


Fig. 12.—Same as Fig. 10, closed.

Experiment 11.—July 5, 1892. Black and white dog, weight 60 pounds. End to-end approximation. Omental flap. Continuous silkworm-gut suture was used in abdomen. The dog was not sick after the operation. On July 10th, five days after the operation, the dog, in licking the wound, loosened the suture and allowed the bowel to escape. He was then killed. The ends of the bowel were perfectly adherent; a plastic exudate obliterated the line of union on the peritoneal side of the bowel. The button was found in position (Fig. 13).

Experiment 14.—July 11, 1892. Spotted dog, same as in Experiment 3, of which you will hear later; weight 55 pounds. End-to-end approximation. Button No. 2 was found to be too large to be admitted into the bowel and gall-bladder button (No 1.) was substituted. This gall-

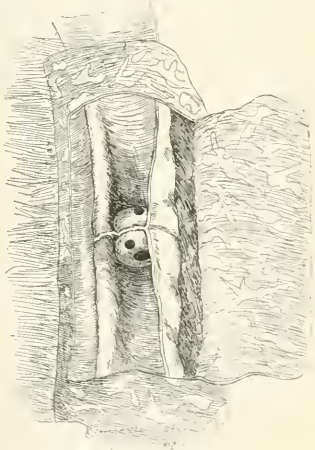


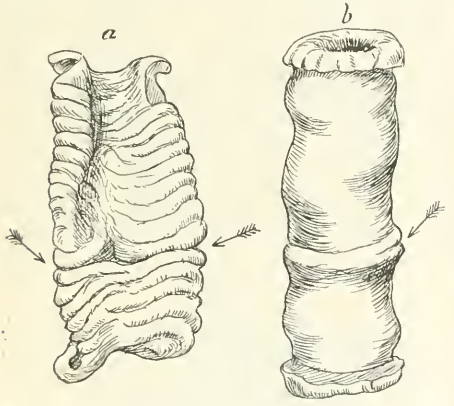
Fig. 13.—Appearance after Union and Partial Atrophy of Tissue within Clasp of Button has Taken Place.

bladder button, as you see, has an opening not more than the eighth of an inch in diameter. I felt very apprehensive that this would be plugged by hair. Time, fifteen minutes. The dog was not in the least sick after the operation, and the button was passed on the sixth day. August 31st, killed dog; found a perfectly united bowel; omental flap adherent; no adhesion to abdominal wall. The union on the mucous side of the bowel was so perfect that the line could be made out only at one point (Fig. 4). No fistula, and no contraction at point of union.

Dr. Fenger was present at the autopsy and declared, "The union is perfect."

Experiment 19.—August 9, 1892. Black female dog, weight 70 pounds. End-to-end approximation after excision of six inches of bowel. Omental flap. Time, nine minutes. August 22d, dog killed; found a union around the circumference, except at one point where the mesentery joins the bowel; here there was a small sinus leading down along the mesentery. The button was still in position. Up to this time in the end-to-end approximation, and in this operation as well, no particular care was taken to see that the peritoneum of the mesentery overlapped, so as to prevent a portion of the muscular and mucous membrane being compressed between the edges of the button without having perito neum covering them to form adhesion. This accounts for the sinus which existed in this case.

Experiment 23.—September 7, 1892. Black curly dog, weight 40 pounds. End-to end approximation of ileum. Small button (No. 1). Omental flap. Time eleven minutes. September 29th, dog killed; perfect union of bowel; omentum not adherent; opening in bowel small, but of same size as button used, button had passed.



Figs. 14 and 15.—Appearance of Mucous and Serous Surfaces of Bowel after Union.

Experiment 26.—September 8, 1892. Bull-dog, weight 55 pounds. Operated on by Dr. F. S. Hartmann in my laboratory. Excision of six inches of ileum with end-to-end approximation. Button No. 1. No omental flap. Care was taken in inserting the running thread to overlap the peritoneum at the mesentery. Time, fourteen minutes. October 2d, opened dog's abdomen; found perfect union; button had passed; bowel somewhat smaller at point of union. The specimen was excised with six inches of the bowel, and another end-to-end approximation made on same dog.

Experiment 33.—October 2, 1892. Same dog as in Experiment 26. End-to-end approximation of ileum, after excising specimen from Experiment 26, along with six inches of bowel. Operated on by Dr. Hartmann. The button was inserted in the usual way. No omental flap. No scarification. Time, sixteen minutes. October 10th, the dog was playful, and ate as usual. October 12th, button was passed. There was no spring in this button. October 15th, dog killed; found perfect union; no sinus.

Experiment 28.—August 9, 1892. End-to-end approximation of ileum, performed in my laboratory by Dr. H. R. Wittwer. Same dog as in Experiment 21. Time fourteen minutes. Omental flap. September 16th, dog killed; found perfect union of bowel. The circumference of the bowel showed only partial atrophy of portion in clasp of button.

Experiment 29.—September 25th, Appleton, Wis. End-to-end approximation of jejunum, button (No. 2). Time, seven minutes. Dog killed seven days after the operation, and specimen examined by my preceptor, Dr. J. R. Reilly, of Appleton, Wis. He reported a perfect union of bowel; the atrophy was not completed. The button still in position.

Lateral Approximation or Intestinal Anastomosis.—By lateral approximation or intestinal anastomosis we understand the formation of a fistulous opening between two coils of intestine. It is performed where it is desirable to have the intestinal contents prevented from passing through a more or less constricted portion of the bowel, and where the bowel is not sufficiently constricted to cause gangrene, and it is not necessary to extirpate the constricted portion. The suggestion for such a communication originated with Maisonneuve. He was also the first to operate; both of his cases terminated fatally.

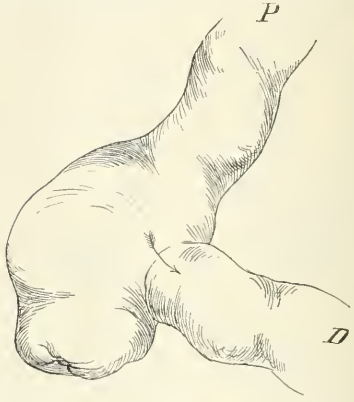


Fig. 16.—Distal End Joined to Proximal Side of Bowel after Excision (wrong way).

Fig. 17.—Proximal End Joined to Distal Side after Excision of Portion of Bowel (right way).

The operation was almost completely forgotten until 1868, when Hacken made some experiments on dogs, and recently E. Hahn, of Berlin, brought the subject again before the profession, and still later great stress was put on the operation by Dr. Senn. The great fear of the operation was the accumulation of fæces in the excluded portion of the intestine. This fear has been found to be visionary, as the experiments recently made on animals show that if the bowel is united so that its contents continue in a direct line, that is, without making a sharp curve, there would be no fear of retention or accumulation, providing the anastomotic opening is sufficiently large. The operation was first performed with sutures. Dr. M. E. Connell, Superintendent of the Milwaukee Hospital, suggested the use of perforated plates (see Senn's "Experimental Surgery"), which were subsequently used by Dr. Senn in his excellent experiments. The first plates used were made of wood, gutta-percha, leather, and lead. Subsequently the disks were made of absorbable material, as decalcified bone. Now we have many modi-

fications of the method, using, in place of the bone-plates, segmented wood, coil of heavy catgut, etc. It was hoped from the results of the early experiments that the operation upon man of lateral approximation would be fraught with much less danger than the end-to-end. But the degree of contraction following lateral anastomosis, and the invagination of the distal end of the bowel into its lumen have increased the danger until it is equal to that of the end-to-end approximation. I have used the buttons for the lateral as well as the end-to-side approximation. The following are the experiments:

Experiment 5.—June 24, 1892. Lateral anastomosis of the jejunum with button. Operation very easily executed. Time, seven minutes. Dog had no unpleasant symptoms. Dog killed July 26th; found a perfect lateral union; opening as large as button. No accumulation of fæces in loop, but considerable atrophy. Button had passed.

Experiment 8.—June 14, 1892. Coach-dog, female, weight 80 pounds. Lateral anastomosis of ileum; very easily performed; no escape of gas or fluids; perfect approximation. Time, sixteen minutes. The dog showed no unpleasant symptoms. July 1st, killed dog with chloroform. Found perfect union of bowel; moderately large opening; loop very much contracted; no accumulation of fæces in loop; no adhesion to abdominal wall.

Experiment 9.—June 24, 1892. Black dog, weight 55 pounds, same as used in Experiment 5. Excision of two inches of jejunum. Both ends of bowel sewed with silkworm-gut sutures. Lateral approximation performed. With this experiment the direction of the bowel was purposely reversed, to see what effect it would have on the adhesion. The contents of the canal, after passing through the fistulous opening, had to move in a direction opposite to its previous course before passing through the fistula. Time for suturing ends of bowels, fourteen minutes; lateral approximation with button, eleven minutes. Total time of operation, twenty-five minutes. No omental flap. Scarification of the serous surface before approximation. The dog did not appear sick after the operation. August 23d, dog killed. Found perfect union at point of approximation. This is the most trying test that a mechanical device for producing adhesions can be subjected to. Found small invagination of upper portion of distal end; lower end of proximal portion of bowel very much dilated, as was anticipated; mucous membrane inflamed and one spot ulcerated. Considerable hair had accumulated in pouch. This is in accordance with the experiments performed by the other investigators where the current of the intestinal canal was made to reverse its direction at any point.

Experiment 25.—September 8, 1892. Resection of six inches of jejunum. Approximation of the end of distal portion to the side of proximal portion of the bowel, wrong way. This is also a very severe test on the adhesion. Approximation to side one and one-half inch from end. End of proximal portion sutured with silkworm-gut. Time, eighteen minutes. September 22d, dog died, as predicted. Proximal portion of the bowel very much distended (Fig. 16); large accumulation of hair and fæces, as anticipated; button still in position; bowel perfectly adherent at point of apposition.

Experiment 27.—September 9, 1892. Black and white dog, weight 45 pounds. Approximation of the proximal end to side of distal portion of bowel, right way, after resection of six inches of jejunum (Fig. 17). Here it was necessary to determine which was proximal and which was distal end. This is done as follows: A loop of bowel is held between the fingers and parallel to the axis of the body; the finger is slipped along down the side of the mesentery; if it goes to the same side as started the portion toward the head is proximal, if it goes to the opposite side the portion toward the head is distal. End of bowel sewed with silkworm-gut suture. Time, nineteen minutes. Dog killed October 2d. Large piece of bone found in opening of button, completely closing it. Pressure atrophy of one-half of the circumference of the bowel that was clasped within the button had taken place, so that the fluid passed on in the alimentary canal on the side of the button in place of through the centre. There was a perfect union of bowel at point of approximation, as you will see in specimen. The line of union on the mucous side could scarcely be discerned. This specimen shows more perfectly than any other the various stages of the process of pressure atrophy.

Excision of Cæcum with Ileo-Colostomy.—This operation may be necessary, and should be successful in certain cases of carcinoma of the cæcum. The removal of this portion of the intestine has so far been followed by unfavorable results, but our advanced knowledge of intestinal surgery should make it a comparatively favorable operation. The best incision for this operation on the human subject should be from the middle of Poupart's ligament down over the tumor through the linea semilunaris. Length of incision must be governed by the size of the tumor. The cæcum is drawn out through the opening, its mesentery ligated, the required portion excised, the end sutured, the ileum cut off, and the end of the ileum approximated to the side of the colon. Experiment—end of small to end of large intestine.

Experiment 15.—July 27, 1892. Brown female dog,

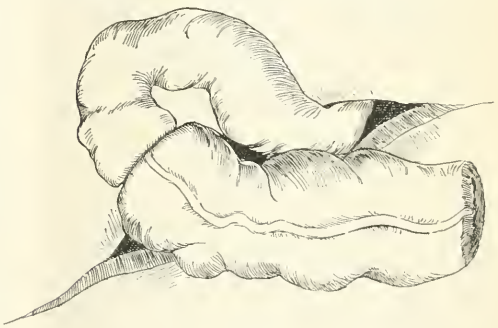


FIG. 18.—Result after Joining End of Small to End of Large Intestine (Excision of Cæcum).

same as used in Experiments 7 and 12. Excision of cæcum; running thread put around the entire circumference of the colon, and the edge drawn within the clasp of button (No. 3). A similar thread put in the end of ileum and tied; button pressed together. This approximated the end of the small to the end of the large intestine. Time, thirty-one minutes. July 28th, dog not in very good condition, refusing to eat or drink. July 30th, dog still sick and declining to eat. From that time on did very well. August 9th, killed dog. Found a perfect union of the end of the small to the end of the large intestine; button had passed; omental flap adherent; opening of same calibre as that of small intestine (Fig. 18). See specimen.

Experiment 31.—August 14, 1892. Black, curly, female dog, weight 125 pounds. Ileo-colostomy. Ileum cut off at ileo-cæcal valve; opening in cæcum sewed with continuous silkworm-gut, Lembert suture. Half of button pressed in end of ileum and the other half inserted in an opening made in colon, three inches below the ileo-cæcal valve, and button joined. Omental flap. Time, sixteen minutes. In closing the abdomen the large omentum was included in the peritoneal suture. September 20th, dog had a miscarriage. September 29th, dog died. Autopsy showed the cause of death to be a volvulus around the omentum where it was adherent to the cicatrix in the abdominal wall. Perfect union between ileum and colon (Fig. 19); button in position; atrophy over half of its circumference; no obstruction at the seat of button; no peritonitis. This is a very

instructive case, as it shows one of the complications that may arise from including the omentum with the peritoneal suture of the abdominal wall, so frequently advised and practised by many operators at the present time.

Besides the above cases three dogs were lost with the anæsthetic. One dog was sick when brought from the pound; he was operated on the following morning, and died twelve hours after, never being able to stand from the time he was taken from the table. The operation lasted only eighteen minutes, and had nothing to do with the cause of his death. In every experiment we obtained union at the seat of approximation. This is one of the most important points brought out by the button, for it

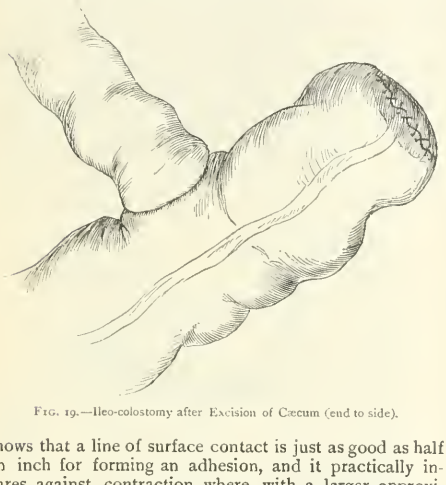


Fig. 19.—Ileo-colostomy after Excision of Cæcum (end to side).

shows that a line of surface contact is just as good as half an inch for forming an adhesion, and it practically insures against contraction where, with a larger approximation surface, contraction would certainly follow. I desire to express my thanks for, and appreciation of, the valuable services rendered me in my experiments and operations by Drs. E. W. Lee, F. S. Hartmann, and H. R. Wittwer, and by Dr. J. H. Hoelscher in placing material at my disposal; my obligations to Dr. Wiener for using my method at an early date and to Dr. E. A. Matthæi for the drawings.

Venetian Building, Chicago, October 29, 1892.

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A Quart a Day for Drinking and Washing.—The victualling scale of allowance of fresh water upon ships, more especially on board British sailing vessels, should obviously, according to Dr. Collingridge, be considerably increased. As it at present stands, an English contemporary asserts, it amounts only to three quarts a day for each man, of which two quarts are handed over to the cook for tea, coffee, soup, etc., leaving one quart only for drinking and washing purposes.

QUININE IN CHOLERA.

Second Paper.

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A former communication,[1] giving my own experience during the cholera epidemic of 1873, contained a comparison between quinine and mercuric chloride, as to amounts necessary to inhibit the growth of the cholera spirillum. Since then, in a ten-minute discussion of the "Treatment of Cholera," before the Medical Section of the Mississippi Valley Medical Association, the following more complete list with comparative amounts was given. The list of inhibitory amounts is from that of Professor Koch, made public in 1884, with the exception of tannic acid, from Cantani, and salol, from Löwenthal, the estimate for the latter being based upon his lowest amount for sterilizing or (as it did not always sterilize) inhibiting the growth of the germ. One grain of quinine, which inhibits in strength of 1 to 5,000; is used as the standard of comparison, and results are given in round numbers, as inhibitory amounts doubtless were.

Koch's List.

Alcohol, 10 to 100	Quinine.	1 grain	=	1 fluid ounce.
Alum, 1 to 100	"	1 "	=	50 grains.
Camphor, 1 to 300	"	1 "	=	$16\frac{2}{3}$ grains.
Ac. carbolic, 1 to 400	"	1 "	=	$12\frac{1}{2}$ grains.
Oil peppermint, 1 to 2,000	"	1 "	=	$2\frac{1}{2}$ ℥.
Sulph. copper, 1 to 2,500	"	1 "	=	2 grains.
Salol, 1 to 100	"	1 "	=	50 grains.
Tannin, 1 to 200	"	1 "	=	25 grains.
Cor. sublimate, 1 to 100,000	"	1 "	=	$\frac{1}{20}$ grain.

Forty grains of quinine is not a very formidable amount to be given in the course of a day, or, for that matter, in a few hours, if occasion required, but the relative quantities of these other drugs seem very large; $2\frac{1}{2}$ quarts of whiskey, brandy, gin, or rum; $666\frac{2}{3}$ grains of camphor, 500 grains of carbolic acid, 100 minims of oil of peppermint, 80 grains of blue vitriol, 2,000 grains of salol, 1,000 grains of tannin, 2 grains of mercuric chloride.

Calomel having little if any effect upon the germ, and opium being necessary to control peristalsis in the guinea-pig, before he can be made to take the disease, the logic of the situation seems to point plainly to quinine as the least harmful, and therefore the most efficient remedy, even in choleraic diarrhœa, or in moderately severe attacks of cholera, where the treatment may be carried through several days. How would it be in "foudroyant," "fulminant," or "explosive" cases, where if anything is to be done it must be done quickly, and enough of the remedy given in the course of two or three hours to arrest multiplication of the germ throughout the whole intestinal tract? In full view of the modern theory that such cases may be the result of toxic absorption rather than the presence of the spirilla in overwhelming numbers in the intestines, it seems but reasonable that by inhibiting the growth of the germ one may at least limit the further production of the toxines. Whatever other treatment may be used, in foudroyant arsenicism we would hardly be justified in withholding the proper antidotes for arsenical poisoning. Even in septicæmia quinine as yet holds the field against all-comers.

The latest estimate from Hamburg (September 8, 1892), places the death-rate at forty-four per cent., and the probability is, that when the full count is in, the loss will closely approximate the old one of about fifty per cent. So far as heard from, the good results to above date seem attributable to hypodermoclysis. The word comes from Paris that Beta naphthol has failed. Salol has failed, and the reason of its failure is apparent when we know that Löwenthal's 20 grammes (300 grains) daily, which according to his theory should set free in the duodenum the large amount of 120 grains of carbolic acid, only equals, after all, so far as inhibitory effect is obtained, 6

[1] Medical Record, October 1, 1892.

grains, or, estimating the carbolic acid alone, less than 10 grains of quinine, the 45 grains of Gonzales, of Salvador, about 1 grain, and the 120 grains daily of Nicholson, of Patna, India, less than 3 grains of quinine. Tannin enteroclysis has failed in spite of Dr. Shakespeare's expressed opinion that "with such an instrument not only the whole length of the colon can be filled with the desired fluid, but also not infrequently a quantity can be made to pass the ileo-cæcal valve into the small intestine." That is to say, a small amount of the remedy be placed just where it is most needed. Quinine failed by the hypodermic method of administration in 1873 and 1884. The germ being inside the intestine, and not in the circulation, and the affinity of the remedy for the kidneys, and not for the bowel, this method of using it would seem as irrational as the administration of sulphites or sulphur by the mouth in the treatment of cycosis, chloasma, or scabies. That by this method of using quinine the damaged kidneys might be impeded in their function, and if there be aught in the old uræmic theory of blood-poisoning in cholera, this undesired event, insured by the further retention of urea and uric acid to the extent of about forty per cent. where complete suppression of urine has not occurred, is easy to understand.

To reach the seat of the disease the remedy must be given by the mouth, and the only noteworthy objection to this use of quinine is the old idea that quinine, under certain conditions, is very irritating to the stomach. In the disturbed stomach of remittent fever we do not always regard this symptom, and it was my own experience in 1873 that this remedy seemed a very good anti-emetic in cholera. In the whole history of that epidemic (Woodworth, McClellan, *et al.*) there is, if I mistake not, but once mention of its having been vomited, and in that case it was given in conjunction with capsicum, not repeated, the patient put upon other treatment and dying thereafter.

Has quinine by the mouth given good results in cholera? I think it has.

Botkin, in 1871, in the *Wiener Med. Presse*, reports a loss of but 17.3 per cent. under the use of quinine. He gave 5-grain doses three or four (sic) times daily, and when vomited resorted to hypodermic injections of 8 grains frequently during the day. If the latter dose, dissolved as it was, had been given by the mouth, and in case of vomiting thereafter had been repeated until about 30 grains had been retained, and continued in small doses so long as symptoms seemed to require it, there might have been a better result even than the above very favorable showing.

Owing to a persistent denial on the part of the authorities at New Orleans that cholera had been imported there in 1873, the profession in the Mississippi Valley (to which this invasion was limited) was left to make its own diagnosis as to the nature of the disease then prevailing. As late as September of that year, or seven months after the epidemic broke out in that city, the New Orleans *Medical and Surgical Journal* discredited the importation of the disease, and the editor admits having considered it at first catarrhal in character. Of the eighty cases first reported, forty-six went on record as cholera morbus, "cholera Asiatica appearing infrequently." The idea of a cholera Mississippiensis was very prevalent during the early history of the epidemic in the lower valley, and throughout its entire history many physicians held to the belief of its malarial origin. This is especially noticeable in Tennessee and Kentucky. Quinine is frequently mentioned in treatment, but too often it is the last remedy of the list, and in but few cases, comparatively, is the size of the dose, the method employed, or the frequency of its administration noted. Good results occasionally obtain after 5-grain doses by the mouth, and several recoveries after rectal injections of the drug in varying quantities. One writer states that the disease was very fatal unless the patient was seen early and large doses of quinine given, and two instances are recorded where the patients recovered after the large amounts of half an ounce in the one case, and two-thirds ounce in the other, had been taken. On such data, however, it is impossible to arrive at any satisfactory conclusion other than that, generally, the results seem favorable.

There is one exception to this rule, and the treatment and its results are so very remarkable as to be nearly unique in the history of medicine, and on so large a scale as almost to force conviction. As recorded in the volume entitled "The Cholera Epidemic of 1873 in the United States," the facts are as follows:

About May 1, 1873, the authorities in control of the Tennessee penitentiary at Nashville, Tenn., received notice that a malignant disease had broken out among two camps of convicts at work along the line of the Memphis & Paducah Railroad. As to how fatal it was there are several conflicting statements. Fortunately we have, on page 137 of the above-mentioned volume, the report of the chief engineer of the road, Mr. J. L. Meigs, which gives the whole number sick of the disease from May 1st to 13th as forty, and the number of deaths twenty four, a fatality of sixty per cent. On the 12th of that month convicts to the number of seventy-five were sent back to the penitentiary at Nashville, purging and vomiting. On arrival about one-half only of this number could be accommodated in the hospital, the remainder being shut up in cells, usually two in a cell having a capacity of two hundred and fifty cubic feet of air, ventilation being through a grating, fourteen inches square, in the cell door, with the bucket that received the choleraic discharges inside the cell.

The diagnosis "scorbuto-malaria" was made by the physician of the penitentiary, and the sick put upon a diet of fresh vegetables and saurkraut, with "tincture of iron *and quinine freely given*, chlorate of potash being used as an adjuvant." The day after the arrival one man died, this man on reaching the penitentiary "being in so much better condition than the others" that he was not admitted to the hospital, but sent to his cell. A letter recently received from Dr. George P. Henry, the physician, states that this patient had no medical treatment whatever. "The remainder recovered rapidly, and in a few weeks most of them were at work." In the above-mentioned letter Dr. Henry further states that to these seventy-four cases "I gave quinine by the mouth altogether," "freely and at short intervals at first," and that "the cases were usually under control in an hour or two after the administration of perhaps 20 or 30 grains of quinine," "that finding its potency for good I kept it up," using it later on "both by the mouth and hypodermically." Dr. W. M. Wright, at that time Superintendent of the penitentiary, in a letter recently received, states: "I think that 20 grains of quinine were given in about four hours."

From May 12th to June 8th there was an average of fifty-seven cases daily under treatment in hospital and in cells. At this last date there was an "explosion" of the disease in the city of Nashville (brought there by these same convicts), and "the fact was recognized that cholera was epidemic within the penitentiary walls." The dietary was changed in conformity to the corrected diagnosis, and during that day and the night following there were three deaths of prisoners from the disease.

On June 9, 1873, Dr. Thomas Menees, a prominent practitioner and teacher of medicine in the city of Nashville, was called in counsel, and the treatment thereafter was as follows: Calomel and opium in small doses frequently repeated, "quinine freely given either by the mouth or hypodermically." In a meeting of the physicians of Nashville, held December 16, 1874 (1873?), Dr. Henry further states, "after June 8th we treated the patients with quinine, calomel, and opium." "I called it malaria." Dr. Menees, at the same meeting, said, "we also used quinine freely," and he places the whole number treated at between four and five hundred, "prisoners and attachés." In the letter from Dr. Henry above re-

ferred to, he places the number severe enough to be called cholera at three hundred and fifty, the rest choleraic diarrhœa. Dr. Menees states that "from the 9th day of June to the 12th day of July there were twelve deaths. There were some that had chronic diseases, and when they were attacked they would die." It will be seen by the above that there were fifteen deaths after the idea that the disease was malaria was given up and the proper diagnosis of cholera made, but only one death prior to this. There are three of these cases in which it is very doubtful that they had any quinine, or if so, whether it was given in sufficient doses in the light of modern discoveries to inhibit the growth of the germ. Dr. Henry writes he cannot remember whether the three dying on June 8th had quinine or not. It will be recalled that on that date the diagnosis of cholera was made. Counting these, however, and allowing nothing for those already enfeebled by "chronic diseases," and taking the lowest figure (350) as the number of cholera patients, and the result is a death-rate of less than 4⅓ per cent. Under similar circumstances, only that the hospital accommodations were sufficient for all, the dietary arranged with reference to cholera and not to scurvy, and only a few of the diarrhœa cases given quinine in tonic doses, the death-rate in the Ohio penitentiary in this city was over seventy-five per cent.

That the disease was Asiatic cholera, which obtained access to the Mississippi Valley through the ricketty States rights' quarantine at New Orleans, is no longer a debatable question. The death-rate of fifty-two per cent. for the epidemic would alone show this. That it was of no mild type in the Tennessee penitentiary is attested by the fact that there was sixty per cent. of loss before the sick were ordered in, and furthermore, that there were one thousand deaths in the city of Nashville during the epidemic—a mortality of one in thirty of the population of the city at that time. That other remedies than quinine were used is true. Tincture of iron, chlorate of potash, "calomel and opium in small doses," camphor, "calomel inserted dry under the skin," blisters, and quinine hypodermically; but all these had been tried elsewhere and found wanting. Reasoning by exclusion the treatment other than quinine is certainly insufficient to account for the results.

To control so fatal a malady the amounts of quinine above indicated seem small, but are quite enough in view of modern developments to effect the wonderful results if continued for several days in sufficient doses to maintain the effect once gained. In my own cases fifteen grains given in the course of two hours always checked the symptoms, and three to five grains given at two hours' intervals thereafter were usually sufficient to keep the symptoms under control. For how long a period this treatment was persisted in I cannot now recall, doubtless in most of the cases for several days, as there were but two instances[1] in my own practice in which the disease tended to return. In another case in which I was consulted the patient got fourteen grains during a forenoon, with the result of checking the disease for a period of forty-eight hours. At the end of that time the symptoms returned, the patient dying in a few hours without quinine. According to the Marseilles experimenters the germ was rarely found in the discharges after four days, and never after ten days' time. The growth of the germ in the last-named case was certainly not inhibited for a sufficient length of time, and in my own cases I suspect that it was a resultant non-specific enteritis that I had to deal with.

Fifteen grains of quinine are sufficient to inhibit growth of germ in about five quarts of fluid, in case test-tube experiments hold good on so large a scale. With the rapid peristalsis of cholera, and the very small quantity of the remedy that would be lost through absorption, the currents being into and through the bowel, it is quite reasonable to suppose that even in the intestinal tube these experiments would hold good, and the quinine, instead of being absorbed, as it usually is, by the stomach, pass onward into the intestine where it is needed. As to coincident treatment I shall not venture to make suggestions. The symptoms calling for hypodermoclysis, for small hypodermic injections of morphine, for small doses of calomel, for doses large or small of bismuth or other astringents, or alteratives in the treatment of the ensuing enteritis, are sufficiently obvious.

The statement is made above that the results in the Tennessee penitentiary are nearly unique. They would have been quite so had it not been for the Naples treatment by camphor. According to Dr. Rubini there was no death among 592 patients treated with an alcoholic solution of camphor in such manner that the patient received in mild cases about thirteen grains, and in severe 66 grains of the drug in the course of one hour. The latter is a convulsant dose equivalent to 4 grains of quinine. Tested afterward in the Whitechapel Workhouse, England, there were 9 deaths out of 15 cases of the disease.

[1] In the article in MEDICAL RECORD for October 1st, but one recurrent case is mentioned. Since then, having had access to a partial report of cases made soon after the epidemic in Cincinnati Clinic, November, 1873, the other case is recalled to memory.

Progress of Medical Science.

The White Corpuscles as Protectors of the Blood.—Dr. Werigo, when examining under the microscope the blood of a rabbit which had received, some minutes before, an injection of a culture of B. prodigiosus in the auricular vein, was surprised to find the blood almost destitute of leucocytes. He repeated the experiment, with the same result, and became convinced that the phenomenon was constant. In order to prove this, he made a series of experiments, in which he injected cultures of different microbes into the blood, counting the leucocytes before and afterward. The main fact brought forward receives the following explanation: The leucocytes disappear from the blood under the above-named circumstances, because, when they have engulfed the microbes injected (which they speedily do), they are arrested in the organs, especially in the liver, where they pass on the ingested material to the endothelial cells of the organ. The rapidity with which the microbes become enclosed in the leucocytes is most astonishing—it is far greater than we have been accustomed to suppose. It is not the leucocytes alone, however, which undertake the clearance of the microbes from the blood, for the cells of the spleen pulp, and also the endothelial cells of the liver, take on direct phagocytic functions. The author's researches also lead him to consider that the first event after the injection of any microbes, of whatever virulence, is their inclusion in cells.—*The British Medical Journal.*

Cancer and Fibroids of the Uterus.—Dr. Ehrendorfer has studied this subject and gives the following conclusions: 1. The association of cancer and fibro-myoma of the corpus uteri is less rare than has been heretofore supposed, and its clinical importance should be recognized. 2. In every case of hystero-myomectomy, before treating the stump, the specimen should be examined to see if the endometrium has undergone cancerous degeneration. 3. If cancer is found in addition to the fibro-myoma, or even if the former is suspected, complete extirpation should be practised. 4. No method of treating the stump after hystero-myomectomy can promise entire immunity from recurrence under these circumstances. 5. If in a case of fibroid uterus there is a watery, sanguineous discharge, accompanied with severe colicky pains, the development of malignant degeneration of the corporeal endometrium should at once be suspected and a radical operation should be performed.—*Archiv für Gynäkologie.*

Spontaneous Reduction of Intussusception in an Infant.—An instructive case of this kind has been observed by Dr. Shewen, who gives the following account of it in

the *Australasian Medical Gazette*: A fine, healthy child, but habitually constipated, had, up to July 6th, been fed on the breast and condensed milk. During the three following days its diet was altered to breast-milk and Nestlé's food, and the bowels became so much constipated that the mother had to use a finger of soap to bring on a movement. On the following day the bowels were moved once naturally, and the child seemed perfectly well. On Monday, the 11th, the child had four motions without any pain or trouble, and went to bed seemingly as well as ever. During the night, however, he was restless, and retched twice toward morning, getting collapsed and cold afterward. Dr. Kearney was sent for. Before the doctor's arrival the child had a large light-colored stool with the faintest tinge of blood about it. The little fellow was then cold and collapsed; temperature subnormal; countenance pinched and anxious, and he was vomiting small quanties of bilious fluid. High up in the left hypochondriac region an elongated mass, about an inch in diameter and about three inches long, could be felt and manipulated without causing the child any distress. This was the intussuscepted bowel. After some severe symptoms the child eventually recovered under simple treatment. This case is interesting as showing what an amount of constitutional disturbance an intussusception, which has only been in existence for twenty-four hours, and which has returned of its own accord, will cause. The child's condition was for many hours such as to cause one the greatest anxiety. Mr. Jonathan Hutchinson recommends strongly the trial of manipulation of the abdomen and the forcible jerking of the body to and fro, previous to an abdominal section, in all such cases.

Appearance of the Eyes in Disease.—The eyes are congested in variola, scarlet fever, rubeola, yellow fever, typhus fever, meningitis. They are projecting in asphyxia, hydrocephalus, hydrophobia, exophthalmic goitre, and sometimes in functional heart disease. They are sunken in collapse, cholera, and hectic. They are staring in convulsions, apoplexy, catalepsy, meningitis, and dementia. They are rolling in epilepsy, and tuberculous meningitis. They are photophobic in hysteria, meningitis, and cephalalgia. The pupils are dilated in syncope, hysteria, collapse, asphyxia, epilepsy, drowning, uræmia, coma; generally in phthisis; poisoning by belladonna, atropia, fungi, and many vegetable irritants and narcotics. They are contracted in concussion, sunstroke, typhus fever, hemorrhage of the pons; in poisoning by opium, morphine, prussic acid, calabar bean, ergot of rye, and pilocarpine. At first contracted and afterward dilated in compression of the brain, in poisoning by alcohol, ether, and chloroform. At first dilated and afterward contracted in severe apoplexy. They are unequal in paralysis, compression of the brain, and posterior spinal sclerosis. They are frequently oscillating in epilepsy, typhus, and spinal sclerosis. In diseases of the eyes external signs facilitate diagnosis. Congested in conjunctivitis, trachoma, and ophthalmia. Dilated in mydriasis, glaucoma, and amaurosis. Contracted in myosis, retinitis, and iritis. Photophobic in strumous ophthalmia, amaurosis, iritis, sclerotitis, choroiditis, and retinitis.—*Times and Register*.

The Importance of Attitude in the Auscultation of Children.—Dr. Azoulay, of Paris, says that the difficulty often experienced in analyzing and localizing abnormal heart-sounds in the very young is known to most of us. The reason is that in the child the following elements come into play—viz., great rapidity of heart beats, the complicated character of the bruits and their vagueness. In such cases the puzzled practitioner contents himself with the hypothetical diagnosis of peri- and endo-carditis. Dr. Azoulay states that he has devised a means of rendering the problem much easier of solution. Dr. Jules Simon and himself have applied the method at the Paris Children's Hospital, and have thus been enabled to localize the extra- and intra-cardiac abnormal sounds. Dr. Azoulay places his little patients in the following attitude: trunk horizontal, dorsal position, arms raised vertically, lower limbs completely flexed, head raised. In this position of the body the normal sounds are considerably reinforced, while the beats are slowed; consequently the abnormal sounds are intensified and better localized. The assumption by the patient of the above position notably increases the pericardial friction-sound. The utility of variations of attitude is great in examinations for life insurance and in the examination of recruits. If a person supposed to be in good health experiences, when lying down, dyspnœa and arythmia, and if the heart-beats are not slowed—all of which symptoms are absent in the upright attitude—a lesion of the myocardium may be diagnosed, and a fatal issue from asystole at a date more or less remote, according to the intensity of the above symptoms, expected.—*The Lancet*.

Resection of the Liver for Hepatic Tumors.—Dr. W. W. Keen gives the results of an analysis of twenty cases of liver resection. The ages of these cases varied from twenty-one to fifty-eight years. Sixteen cases occurred in females, which the author thinks may be due to tight-lacing. The tumors and portions of liver removed have varied in size from a small nut up to three fists. Of the twenty cases, nearly all were incorrectly diagnosed; some were thought to be floating kidney, others tumors of the pancreas. The tumors were echinococcus and hydatid cysts, cancer, syphilis, sarcoma, and adenoma. Dr. Keen thinks that, judging by experiments on animals, a large portion of the liver can be removed without much danger and without interfering with its function. Ponfick found that three-fourths of the liver could be removed, although prostration was very severe at first. The escape of bile into the peritoneal cavity is generally of no consequence. In preventing hemorrhage the base of the tumor should be severed by repeated small touches of the cautery point, the large vessels being all ligated. In the majority of cases the stump was returned into the abdominal cavity; in six cases, however, it was sutured in the abdominal wound. Of the twenty cases, seventeen recovered, two died, and in one the result is unknown. The mortality thus far has been about ten per cent.—*Boston Medical and Surgical Journal*.

The Urine in Phthisis.—Dr. W. H. White has made some observations on this subject (*The British Medical Journal*). In 7 out of 9 urines examined the urine remained acid a very long time. In 182 specimens examined only 36 remained acid less than five days, and 4 remained acid for over one hundred days. All the urines were left at the temperature of the ward and freely exposed to the air at first. The sediment which formed in the acid urines consisted of amorphous urates and abundance of uric acid crystals. If it had remained acid some time abundance of yeast-like organisms could be found in it, but very few bacilli. The change is, therefore, in many respects the same as that described as acid fermentation. Most urines developed a peculiar smell, not unlike that detected in sewage-purification works. Many of the acid urines became darker and darker, becoming eventually black when seen in bulk, though only dark-brown when in thin layers. This change usually took a month or more; once black, the urine remained so, even if kept for nearly a year. The cause of the darkening is obscure; it is not, however, due to pyrocatechin. These peculiarities could not be connected with any symptom observed during life or with any post-mortem change. None of the patients who died had any local disease of the genito-urinary tract. The condition of the urine was not related to any particular drug or diet. It seems that these peculiarities of the urine are due to the excretion of some of the direct or indirect products of the action of the tubercle bacilli.

The Employment of Married Women in Factories.—That the employment of married women in factories is likely to conduce to a high infant death-rate will readily

be admitted, but perhaps we were hardly prepared to find that the injurious influence of such employment should be so great as it would appear to be from the statistics for Staffordshire, which formed the basis of a paper read by Dr. Reid at the Public Medicine Section at Nottingham. In the compilation of the figures, which had reference to a population of upward of 500,000, and extended over a period of ten years, every care seems to have been taken to exclude fallacy; and therefore, so far as Staffordshire is concerned, the case appears to have been proved. It would seem that the conditions of trade in Staffordshire enable a line to be drawn between towns corresponding in every respect as regards general influences that affect injuriously the lives of children, but differing essentially in one feature, namely, the relative proportion of married women engaged in work; and to this cause alone an increase of twenty-eight per cent. in an already high infant mortality is to be attributed. If the figures for the country generally bear any resemblance to those for Staffordshire, a very serious case is made out, and it clearly becomes a question whether legislative interference is not called for. Dr. Reid gives similar figures for towns throughout England, so far as the Registrar-General's returns permit of their being worked out.—*British Medical Journal.*

Indications for the Use of Cimicifuga.—According to Dr. Reed, ten to thirty drops of the fluid extract after meals are used to cure seminal emissions. This has rarely failed in his experience. Half a grain to a grain of the resinoid, cimicifugin, twice a day, has occasionally been found useful in conditions of nervous depression, hysteria, and incipient melancholia. Five to twenty drops of the tincture, several times a day, have proved very helpful in scanty menses, especially in maiden ladies; but if repeated, as often as every three hours even, are likely to cause severe headache. This untoward effect he has never seen from the largest doses, such as half a drachm or a drachm of the fluid extract three times a day. Very small doses, as one-quarter of a drop up to one drop of the ordinary tincture, repeated every one or two hours, will often promptly relieve a frontal headache due to mental fatigue, or any kind of a headache resulting from pelvic congestion at the menstrual period in women. The same doses are often efficient in preventing abortion when threatened from weakness or passive congestion of the uterus, or from habit at a certain stage of pregnancy. Two or three drops of the tinctures of cimicifuga and gelsemium—sometimes one drop of each—every hour or two, are among the most certain means of bringing on the menstrual flow when delayed by passive congestion, cold, grief, or other similar cause, and acts similarly with the lochial discharge after parturition. Dragging pelvic pains arising from the same causes may be relieved by the same combination.—*American Therapeutist.*

Extirpation of Cancerous Uterus in the Sixth Month of Pregnancy.—Dr. Stocker reports the case of a woman, aged thirty-six years, who had had eight children, the last some three and a half years previously. The woman again became pregnant, but soon hemorrhage and offensive discharge set in. Changes in the cervix uteri became evident. Finally, the existence of carcinoma became indubitable, and it was decided to remove the entire uterus. The operation was performed in about the sixth month of pregnancy. The body of the uterus was removed through an opening in the abdomen; the cervix through the vagina. The fœtus died during the operation. Little blood was lost. The patient was dismissed from the hospital on the twenty-eighth day after the operation.—*Centralblatt für Gynäkologie.*

Toxicity of the Serum in Cases of Eclampsia.—Puerperal convulsions are now generally regarded as the outcome of auto-intoxication. Bouchard has demonstrated the lessened toxicity of the urine passed, often only in diminished quantity, by such patients. It occurred to Dr. Chambrelent, of Paris, to supplement these observations of Bouchard by examining the serum of the blood drawn during the attacks (*The Lancet*). Taking as a basis the fact already established by Rummo, that about five ounces of healthy human serum is the quantity to kill two pounds of rabbit, he found that this degree of toxicity was greatly exceeded when eclamptic serum was employed, and that there was a constant relation between the poisonous properties of the serum and the gravity of the case. Six patients were the subjects of the above experiments at the Obstetric Clinic of the Paris Faculty.

Tetanus Treated by Cold Baths.—Dr. Rivière has observed two cases of tetanus with high temperature treated with cold baths. In each case chloral and opium had failed to give relief, and as the temperature was high it occurred to the author to try the effect of immersing the patients in cold baths. This was done with marked success, there being in one case no recurrence of trismus or rise of temperature, and convalescence taking place in about a week. In the other case the bath was repeated several times, always with good results, both as regards fall of temperature and disappearance of the spasms.—*Lyon Médical.*

Treatment of Burns in Children.—Dr. Wertheimer says that the absorption of some poisonous product would appear to be the most probable cause of death in burns (*British Medical Journal*). This poison has been said to be a ptomaïne not unlike muscarine in action. Ointment-like applications are more efficient than dry ones, although the latter have some advantages, such as not requiring frequent change, etc.; but lymphangitis is more often observed. The object of treatment is to apply some anodyne and antiseptic agent, and to lessen the irritability of the nervous system. Iodoform vaseline is among the best ointments, but the author does not use it in children, owing to the danger of intoxication. Carron oil is a valuable anodyne application, but it is without antiseptic properties, hence the author adds thymol to it (0.05 to 0.10 per cent.). Another combination is an ointment containing bismuth subnitrate and boracic acid, with lanoline and olive oil. The author recommends thymolized carron oil for the first two weeks, and then the above-named ointment, or the latter may be used from the first. Morphine, and sometimes chloral hydrate, may be required internally, but in children under two years they are best avoided. Stimulants are more often needed, even apart from the severe collapse which, in adults, requires prompt treatment.

The Situation of the Respiratory Centre.—The Paris correspondent of the *Lancet* writes that we have hitherto been accustomed to regard the integrity of a tract situated in the medulla oblongata between the vaso-motor centre and the calamus scriptorius, and christened by Flourens *nœud vital*, as indispensable for the continuance of the respiratory function. But Dr. Brown-Séquard has brought to the notice of his colleagues of the Académie des Sciences a series of experiments conducted by MM. Gad and Marinescoy on sixty-five dogs, rabbits, and cats, which lead them to a different conclusion. These physiologists maintain that the destruction of the various centres regarded by Flourens, Gierke, and Mislawsky as centres of respiration, does not involve the permanent arrest of that function, provided certain operative precautions be taken. They further state that there exists in the lower part of the medulla, at some depth from the surface, a mass of cells the destruction of which brings about arrest of respiration, while the stimulation of the same mass determines characteristic changes in the respiratory rhythm. This region, which they are disposed to regard as the true respiratory centre, is not a clearly circumscribed zone, but is composed of a collection of nerve-cells scattered on each side of the roots of the ninth nerve. The centrifugal paths along the cord are direct and occupy the anterior radicular zone.

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PULMONARY PHTHISIS IN LATER ADULT LIFE.

THERE is a pretty wide-spread impression, not confined altogether to the laity, that pulmonary consumption is a disease pre-eminently of youth and early adult life, and that it is of exceedingly rare occurrence in later adult life and old age. That this belief is not well founded is shown, however, by statistics, and indeed it would rather seem that the disease occurs much more frequently, in proportion to their number, in the aged than in children. Thus the reports of the Registrar-General of England make the death-rate for phthisis between the ages of fifty-five and sixty-five years greater than between the ages of fifteen and twenty, and between sixty-five and seventy-five twice as great as between ten and fifteen. At the Brompton Hospital for Consumption, out of 800 cases of phthisis in which a post-mortem examination was made, there were 20 cases in people over fifty-five years, and about the same number in children under fifteen; but when it is remembered that there are between three and four times as many children under fifteen years of age as there are of elderly people over fifty-five years, it will be seen that this is, after all, a fairly large proportion of cases of phthisis among the latter.

Dr. Hector W. G Mackenzie, in an article in the *Medical Press and Circular* for October 5, 1892, presents some interesting facts concerning pulmonary phthisis in elderly people, which we may briefly consider here. Of 42 cases in persons from fifty-five to seventy-two years of age, 35 were in men and only 7 in women. In 5 cases the tubercular process was limited to one lung, and in 17 it was much older and more extensive in one lung than the other, so that clinically the disease might have been called unilateral in more than half of the cases. These facts, in regard to age and the limitation of the lesions to one lung, are in accord with the experience of others who have studied consumption in those past middle life.

The author's observations do not, however, bear out the statements made by others, that laryngitis and diarrhœa are infrequent complications of the pulmonary affection. Of 26 cases in which the condition of the larynx was noted, tubercular disease existed in 14, and in 23 out of 29 cases there were intestinal ulcerations. Thus both the larynx and the intestine were involved in an unusually large number of cases. It would, however, be manifestly unsafe to formulate any definite conclusion from the results observed in such a small number of cases.

The symptoms of phthisis in later life are far less pronounced than at an earlier age, and many who are in even an advanced stage of the disease are regarded simply as invalids without any well-defined disease. In some instances the affection simulates in its symptoms disease of the stomach or other abdominal organs. There may be in such cases pain in the abdomen after taking of food, tenderness on pressure, and frequent vomiting, but no complaint of anything pointing to chest troubles. Although the symptoms in such a case would point to abdominal troubles, no growth in that region can be detected on the most careful palpation, whereas examination of the chest will reveal the presence of extensive pulmonary lesions.

Maclachan has pointed out that hæmoptysis is encountered in phthisis of later life chiefly toward the end of the disease, and states that sudden death from this cause not infrequently occurs in elderly people who have never been suspected of being tuberculous. This statement is corroborated by Dr. Mackenzie, who found a history of pulmonary hemorrhage in eleven of the forty-two fatal cases studied by him, and in no less than seven of these it was the cause of death. In two of these there was but one attack of hæmoptysis, in the others there had been several attacks preceding the fatal one.

The duration of the disease in elderly persons is very difficult to determine by reason of the insidious nature of the onset. It is, however, essentially chronic, as is evidenced by the changes found in the lungs post mortem. In one case cited by the author, the patient, a man sixty-four years of age, had complained of slight cough and shortness of breath for six weeks only. He died in about two weeks after coming under observation, and the autopsy revealed the presence of quite old tubercular disease. Owing to the absence in many cases of the characteristic symptoms of pulmonary tuberculosis, the physician would do well always to think of the possibility of phthisis in an elderly patient, when feebleness and loss of strength are very noticeable, especially if in addition a slight cough is present and the person is seen to be falling away in flesh.

THE ST. LOUIS EPIDEMIC.

Two great cities of this country have been suffering from epidemics: Philadelphia from diphtheria, St. Louis from typhoid fever. The development of the epidemic in the latter city has been striking and serious. In October there were about 200 cases, in November over 1,358, increasing from 86 in the first week to 930 in the fourth. On one day 320 new cases were reported. This is something extraordinary in modern times, and unless the progress of the infection soon ceases, St. Louis will outrival Chicago, which had 2,000 fatal, and probably 10,000 non-fatal, cases in 1891. The sanitary authorities of St. Louis trace the trouble to the water-supply of the city. This is taken from the river just below a number of bone-burning and rendering factories.

Sewers which drain a considerable area, in which these factories are situated, discharge their accumulations into the river just above the spot where water for the use of the city is taken. The Chief Sanitary Officer inspected

the source of supply, and the *Republic* refers to his report as follows:

"The Prairie Avenue sewer drains some of the Lowell rendering establishments and empties into the river just above the water-works. 'Within a thousand feet of the present pumping station I found the Prairie Avenue sewer pouring a mass of filth into the river,' says the Sanitary Officer. 'That in itself is enough to contaminate the water. The stench in that vicinity was frightful. In this same district are the Gin Grass Creek and Harlem Creek. The water in both of these is foul, and, of course, emptying into the river so close to the pumping station, has a detrimental and dangerous influence on the city's supply.'"

The citizens of St. Louis have appreciated the danger, and, as we are informed, have been at work extending the mains some distance above the dangerous area. Unfortunately the new aqueduct was not completed in time.

There seems to be no opportunity for severe censure in this case, since the health authorities have been at work for some time in trying to avert the misfortune which has overtaken their city. The epidemic is a forcible lesson in hygiene, though at the same time a tragic and expensive one.

'TWIXT CUP AND LIP.

It is a matter of common notoriety that many a slip can occur between the moment the cup is raised and that when it comes into actual contact with the lips. It is also well known that many a man not only slips and slips again, but may actually fall, because of the too frequent meeting of lip and cup. It has remained, however, for a Brooklyn gentleman by the name of Vanderwerker to point out to the clergy of his city that danger lurks between the lips of their respective flocks and the brim of the sacramental cup. This he has had the courage to do by distributing to all ministers a pamphlet or circular-letter, showing that the prevailing method of passing the cup is uncleanly.

The idea seems to have been entirely new to the preachers, who appear to be unanimous in their condemnation of the author. Medical literature, however, is not lacking in material bearing upon the question, and there seems to be no doubt in the minds of those who have given most thought to the matter, that promiscuous kissing, passing the loving cup at banquets, and the drinking-horn at students' *kneipes*, as well as the prevailing custom regarding the communion cup in the Church, are all open to very serious objection from hygienic stand-points.

Syphilis no less than phthisis may be thus transmitted, and no doubt a host of other diseases, and it must not be thought that church members, who are thoroughly consistent Christians at the same time, are not liable to have contagious syphilitic lesions in the mouth. The syphilis of the family, that acquired in all innocence and possessed in ignorance, is that most likely to be disseminated. Let, then, the Brooklyn reformer take new courage in his crusade against the contagion in the cup, which should indeed be directed against the use, by people in common, of any drinking utensil. Advances in bacteriology make it necessary to reconstruct the time-honored proverb, so that everyone will bear in mind when about to drink from a vessel which has not been properly cleansed 'after having touched the lips of another: "There's many a bug 'twixt the lip and the mug.'

THE SUCCESS OF POST-GRADUATE INSTRUCTION.

The erection of another building for post-graduate instruction, a building more elaborate, costly, and complete than any heretofore attempted, marks a further step in the progress of medical education. It shows that there is a demand for graduate and higher technical medical studies, and that the new system has come to stay. No one who has watched the work of these institutions can fail to see that they do an enormous amount of good. They help to complete the systematic and didactic teaching of under-graduate colleges, they furnish admirably the means for general practitioners to "brush up," and they stimulate them to better and more skilful work. In a measure they are corrective also of some of the evils of excessive specialism. They breed specialists to be sure; but they, still more, give to the general practitioner sufficient technical knowledge to enable him to dispense with specialists in most of the ordinary cases. A physician who goes into a community with some special skill in one or more lines of work soon forces his colleagues to equip themselves also in these lines, and thus he raises the general standard of medical art.

It is but just to remember that the success of post-graduate schools has been attained only by the expenditure of much hard work, which work has not always been sympathetically received. The under-graduate colleges, from not very high motives, have in some cases antagonized the promoters of graduate schools; the opposition, however, has gradually become less, for its uselessness was recognized, and the fact that the two kinds of educational institutions need not and do not conflict has gradually dawned upon the understanding of under-graduate faculties.

Almost Perfect Form.—It is said by those in charge of the silver statue of "Justice," now being made as Montana's mining exhibit at the World's Fair, that Miss Ada Rehan, of this city, was chosen as the model, because out of the sixty-eight measurements which mark the standard of perfect womanhood, in sixty-two she conformed to the requirements, and in none of the other six did she deviate one-quarter of an inch from the standard. It is only doing "justice" by a $\frac{62}{68}$ woman to place her on a $250,000 pedestal.

Claim for Treatment by Prayers.—Dr. F. B. Hyland, of Stoughton, Wis., recently appeared in the Probate Court and presented a claim of $245 against the estate of Phœbe Carter. He said the money was due for one hundred and forty-seven magnetic treatments he gave Mrs. Carter. Cross-examination on the part of the Court developed the fact that Mrs. Carter was in Florida when the alleged treatment had been given, and that the treatment was in the shape of prayers. The Court concluded that Mrs. Carter was not benefited by the treatment, as she was in another climate at the time, and he disallowed the claim. Dr. Hyland took an appeal.

News of the Week.

The Brooklyn Gynecological Society met at their rooms on Friday, December 2d, and elected the following officers for the year 1892–93: *President*, Walter B. Chase, M.D.; *First Vice-President*, George McNaughton, M.D.; *Second Vice-President*, Z. T. Emery, M.D.; *Recording Secretary*, L. Grant Baldwin, M.D.; *Corresponding Secretary*, J. C. MacEvitt, M.D.; *Treasurer*, William Maddren, M.D.; *Pathologist*, J. M. VanCott, Jr., M.D.

The S. D. Gross Professorship of Pathological Anatomy Fund.—The committee appointed by the General Committee to audit the accounts of Dr. Richard J. Dunglison, Treasurer of the S. D. Gross Professorship Fund of the Alumni Association of Jefferson Medical College, respectfully report that after an examination of such accounts, they find that there were sixty contributors to the Fund, the total amount contributed being $3,499.10. In accordance with a resolution of the General Committee, these contributions being insufficient, have all been returned to the donors, and the Treasurer has presented a voucher for each amount thus refunded. A great proportion of the whole amount has been retained undistributed until recently, so that the interest on the amount might so accumulate as to enable the Committee to refund to each subscriber the full amount of his contribution, without any deduction for the expenses of publication of circulars, postage, etc., which were necessarily heavy, from the wide-spread diffusion given the objects of the Fund.

Dr. Henry T. Byford has been elected to the Chair of Gynecology in the College of Physicians and Surgeons, Chicago, to fill the vacancy made by the death of Dr. A. Reeves Jackson.

The Chicago Gynecological Society.—At the annual meeting held October 28, 1892, the following officers were elected: *President*, E. J. Doering, M.D.; *First Vice-President*, Ferdinand Henrotin, M.D.; *Second Vice-President*, Franklin H. Martin, M.D.; *Secretary*, Henry Parker Newman, M.D.; *Treasurer*, A. H. Foster, M.D.; *Editor*, W. S. Christopher, M.D.

Dr. John Ridlon has been appointed Professor of Orthopedic Surgery in the Post-Graduate Medical School of Chicago.

The North Texas Medical Association will meet in Fort Worth, Texas, Tuesday, Wednesday, and Thursday, December 13, 14, and 15, 1892.

A National Bureau of Health.—A bill has been introduced into the House of Representatives by Mr. Payne (Democrat), of Maryland, for the better protection of commerce and the general welfare, and for the establishment of a national quarantine. It is intended to prevent the introduction of contagious or infectious diseases into the United States from foreign countries or from one State into another, and to establish within the Treasury Department the National Bureau of Health. This bureau is to consist of a sanitary council composed of an executive commission and an advisory council. The Executive Commission is to consist of a Commissioner of Quarantine, a Commissioner of Internal Sanitation, and a Commissioner of Vital Statistics, who shall each receive an annual salary of $7,000. There shall be four members of the Advisory Council—the Surgeon-General of the Army, the Surgeon-General of the Navy, the Surgeon-General of the Marine Hospital Service, and an officer of the Department of Justice—who shall receive no additional compensation. The bureau shall meet at the time and place designated by the Secretary of the Treasury. The bureau shall perform all the duties in respect to quarantine which are now imposed on the Treasury Department. It shall obtain information of the sanitary condition of foreign ports from which contagious or infectious diseases may be imported, and also weekly reports of the sanitary condition of ports and places in the United States. It shall make an annual report of its operations to the Secretary of the Treasury. It is made unlawful for any merchant ship from any foreign port to enter any port of the United States except under such rules and regulations as may be made under the provisions of this Act. A violation of these rules shall be punishable by a fine not exceeding $1,000, which shall be a lien on the vessel. All vessels clearing for any port in the United States shall be required to obtain from the consul at the port of departure a bill of health in the form prescribed by the Bureau of Health. This bill of health shall be considered a part of the ship's papers.

The President is authorized to detail officers to carry out the provisions of the bill. The Secretary of the Treasury is authorized to accept, through such steps as may be legally necessary, the possession of all international and interstate quarantine stations and inspection posts. The Sanitary Council shall have authority to forbid entry of vessels from ports known or suspected to be infected with cholera, yellow fever, small-pox, or other declared quarantinable diseases.

American Physicians in Russia.—In his report to the State Department, Consul-General Crawford, of St. Petersburg, calls attention to the fact that a young New York physician, Dr. Blackstein, was chosen by the Russian Government to carry out investigations at Baku, relative to the cause of Asiatic cholera. He also speaks favorably of the introduction of intestinal irrigation by Dr. Lee, of Chicago, into the Obuchol Hospital in St. Petersburg, during the recent outbreak. Dr. Lee read a paper at the last Academy meeting, based on his experience during the late epidemic in St. Petersburg and Hamburg.

Mr. Victor Horsley and Miss Cobbe.—*Apropos* of the anti-vivisection agitation now going on in London, Mr. Horsley has been led, after a study of Miss Cobbe's articles, to write the following: "Further, I have purposely employed this plain language in order to make it clear to the public that Miss Cobbe is unworthy of the customary courtesies of debate. Miss Cobbe has, ever since this agitation began, systematically employed the weapon of deceit, professing, as in the present instance, to quote the whole truth, but in reality suppressing or falsifying the essential particulars. This line of conduct deprives Miss Cobb of all credit, and renders it impossible for me to extend to her the consideration which would otherwise have been due to her sex. I have doc-

umentary (printed) proof that she has chosen, for sixteen years or more, to take an immoral course, namely, accusing medical men of murder, cruelty, falsehood, etc., and, in fact, almost every crime in the calendar, while supporting such charges by frauds of the kind I have now exposed. I cannot, therefore, treat her as I would wish to do; I can in this matter only deal with her quite impersonally, so far as her sex is concerned."

Punch presents this matter as follows:

A Modern Scientific Discussion.

"——Animis Cœlestibus Iræ!"

Miss Fanny (*a gentle and most veracious child*): Yah, you cruel coward! you and your friends skinned a live frog!

Master Victor (*an industrious but very touchy little boy*): You're a liar! The frog was dead, and you know it!

Miss Fanny: Boohoo! Whether it was dead or not, you've got no right to call names; 'cos I'm a girl, and can't punch your head.

Master Victor: It's just because you're a girl that I can't punch yours! You should have thought of that before you called me a coward!

Our happy New York contemporary *Life* is curiously enough on the side of Miss Cobbe. It might learn a lesson in toleration, honesty, and good sense from its London exchange.

The Nebraska Scientific Centre.—A correspondent of the *Omaha Clinic* says: "Many changes have taken place in the faculty, and we enter the session under the most favorable auspices. The New York Medical Record, in commenting upon recent scientific articles contained in *The Clinic*, has failed to appreciate that the Omaha Medical College is the nucleus around which gather such minds, and that it is the faculty of this college that is making Omaha a great scientific centre of medicine. We, as students, cannot fail to see the superiority of this school, which can not only obtain such men, but can use and retain them. Scientific medicine has made rapid advancements in Omaha in the past few years, and the present only indicates the open field which lies before us, and we feel that it is a duty which we owe to our *alma mater* to not only assist in this work, but to push to the front and aid in every way our untiring Faculty."

Obituary.

JAMES R. LEAMING, M.D.,

NEW YORK.

Dr. James Roseburgh Leaming, who died in his seventy third year at his home at 18 West Thirty-eighth Street, December 6th, was among the most eminent specialists of New York City for over a quarter of a century. He had made the study of diseases of the chest a matter for his particular inquiry. He was born in Groveland, Lexington County, on February 25, 1820, and after graduating from the Temple Hill Academy, at Geneseo, he entered the offices of Drs. Edward and Walter Lauderdale, in 1847. After two years of study he came to the medical department of the University of New York, and graduated in 1849. He began the practice of medicine in this city. While he was attending physician at the Northern Dispensary, Dr. George P. Cammann suggested to him that he should devote himself to chest diseases. Even in 1865 he was enjoying considerable celebrity. In 1867 he was made visiting physician at St. Luke's, and when his term expired they created for him an especial office, called special consulting physician, which he held until his death. He was a member of the Medical Society of the County of New York, of the Academy of Medicine, of the Pathological Society, of the Physicians' Mutual Aid Association, and of the New York County Medical Association. He was emeritus professor at the Woman's Medical College and at the Polyclinic, after having been active professor for many years. He read and published a large number of papers, the most valuable of which he collected in his work, "Diseases of the Chest." Dr. Leaming for a good many years had suffered from a complication of lung and heart troubles, and within the last five years these had made him inactive in his profession. Last June he made his last professional call, and since that time he had been steadily failing. He died of phthisis. He had been married three times. His first wife was Jane Helen Cheeseman, of Philadelphia, whom he married in 1853. She died in 1865, leaving him one son, Dr. James Leaming. He married his second wife, Miss Kate L. Strobel, in 1868, and she died in 1888, leaving him a daughter, Mrs. F. W. Meeker, of Grand View on the Hudson. His third wife was Miss Susan Emilia Nelson, daughter of Mr. John G. Nelson. He married her August 14, 1890, and she survives him.

Few physicians of this city have been more warmly esteemed by their professional brethren, and few have had a larger following. Dr. Leaming was a man of strong individuality, and had his own opinions and views, which he inculcated with great earnestness and enthusiasm. In his last sickness he is said to have lamented the fact that he could not auscultate his own chest and satisfy himself of his malady.

JONAS JONES, M.D.,

ROCHESTER, N. Y.

Dr. Jonas Jones, one of the leading physicians of Rochester, died at his home in that city, on Sunday night. He was born in Canada, fifty-five years ago. He graduated from the Bellevue Hospital Medical College in New York, in 1864, and soon afterward was appointed physician in charge of the Rochester City Hospital. He had been Health Officer of Rochester, and was a member of the Board of Park Commissioners when he died. One of his sisters is the wife of James Dundas, a member of the Canadian Parliament.

GEORGE H. BOSLEY, M.D.,

NEW YORK.

Dr. George H. Bosley died suddenly from heart failure on December 3d, at his home in this city, in the fifty first year of his age. He was born in Lakeville, Livingston County, N. Y. He was a graduate of the New York College of Physicians and Surgeons, and served during the civil war as Assistant Surgeon in the army. He organized and took charge of the Relapsing Fever Hospital on Hart's Island, and was connected with the outdoor department of Bellevue Hospital for more than twelve years.

Dr. Bosley was well known in the city as an able and successful physician, and a most estimable man.

Onions are said to act as a preventive of cholera. All that it is necessary to do, according to the advocate of this new and malodorous specific, is to eat onions three times a day or oftener, and to keep the sleeping-room festooned with bunches of the vegetable.

Society Reports.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Fifth Annual Meeting, held in Louisville, Ky., November 15, 16, and 17, 1892.

FIRST DAY, TUESDAY, NOVEMBER 15TH, MORNING SESSION.

THE Association met in the Council Chamber of the City Hall, and was called to order at 9.30 A.M., by the PRESIDENT, DR. J. MCFADDEN GASTON, of Atlanta, Ga.

An Address of Welcome was delivered by DR. L. S. MCMURTRY, of Louisville, Chairman of the Committee of Arrangements, the response to which was made by the President.

Personal Recollections of the Late Dr. Benjamin W. Dudley, of Lexington, Ky., and His Surgical Work.—This was the first paper and was read by DR. BEDFORD BROWN, of Alexandria, Va. The speaker paid an eloquent tribute to Dr. Dudley, and characterized him as the greatest living lithotomist that this country has ever produced, and the most successful in the history of the world. The speaker's close relationship to Dr. Dudley, as private pupil and assistant for two years, enabled him to present a clear and faithful sketch of his character and surgical work.

Experiences in Pelvic Surgery.—This was the title of a paper read by DR. A. V. L. BROKAW, of St. Louis, Mo. Of all the surgical problems difficult to solve, it may be truthfully said that those met with in the pelvis are the most trying. The speaker knew of no surgical work which will compare with the experiences found in the pelvis; a diversity of conditions, complications, and unexpected happenings are ever presenting. In a series of many operations but few will be alike in every particular. As his experience became larger he was free to confess his inability to correctly diagnose the character of abdominal and pelvic troubles. He had diagnosed pus-tubes and found extra-uterine pregnancy, diagnosed extra-uterine pregnancy and found pus; diagnosed ovarian lesions and found the trouble located in the tubes, and *vice versa*. When well-defined pelvic lesions exist, nothing short of radical measures succeed. The one condition above all others where exploratory incision should be adopted, was in cases of suspected extra-uterine pregnancy. It was correct and good surgery to open the abdomen, and not wait for all the classical signs to appear. The symptoms of extra uterine pregnancy were so frequently unreliable and obscure, that he was firmly convinced a radical position should be taken. A case was cited in point.

DR. WILLIAM WARREN POTTER, of Buffalo, desired to endorse that position of the paper pertaining to an early exploratory incision in cases of suspected extra-uterine pregnancy. As regards the use of the sound, he had brought an indictment against it some six or eight years ago, consequently he would not expatiate upon it at this time.

DR. JOSEPH TABER JOHNSON, of Washington, said that as soon as the surgeon diagnosed something in the abdominal cavity that ought not to be there, anatomically or physiologically, and was histologically wrong, it should be removed. An exploratory operation was justifiable in cases of suspected extra-uterine pregnancy, and the surgeon should base his further procedures upon what he finds after making the exploration.

DR. W. E. B. DAVIS, of Birmingham, Ala., thought the pendulum relative to surgical interference had swung a little too far. He believed that a great many of the so-called "tinkerers," who succeeded in relieving their patients, did not accomplish it so much by the local treatment they used, as by having patients under their care, keeping the bowels open, giving constitutional treatment, seeing them regularly, etc. While, by so doing, they might not be cured in all cases, they were greatly benefited. Regarding the diagnosis, surgeons who were opening the abdomen constantly would rarely give a positive diagnosis in the case. Dr. Davis cited the case of a woman who had an acute attack of peritonitis, and the history was the same as from pelvic abscess.

DR. BROKAW, in closing the discussion, said that in every case of suspected extra uterine pregnancy it was good surgery to make an exploratory incision and operate before rupture took place.

Craniotomy upon the Living Fœtus is not Justifiable.—DR CORNELIUS KOLLOCK, of Cheraw, S. C., read a paper with the above title. He said this operation implied the death of the fœtus and a frightful mutilation of its body, often accompanied by serious lacerations of the vagina and adjacent tissues of the mother. Recent advances in obstetrics, gynecology, and abdominal surgery contribute largely to a demonstration of the fact that a timely resort to Cæsarean section in pelvic obstruction is the great factor to success. In Germany, out of 149 cases of contracted pelvis, 109 women and 136 children were saved. If craniotomy had been done in those cases 149 children would have been destroyed, and probably fifty women—perhaps more—making a sacrifice of at least one hundred and ninety-nine lives. In many of these cases exhaustion had supervened and septic influences had already been excited. This, added to a tardy disposition to union by first intention, caused by contusion of the parts involved in the uterine incision, lessened materially the woman's chances for recovery. Zweiffel was successful in 29 cases out of 30; Schauta did Cæsarean section 15 times without a single death. Recently, in 18 operations done in Louisville, 14 were successful. Of 8 in Ohio, 6 were successful. Dr. Price has done Cæsarean section a number of times successfully. Dr. Kollock is firmly convinced that eighty five or ninety per cent. of the cases of obstruction of the pelvis forbidding the delivery of the fœtus in the natural way, might be saved by a timely resort to Cæsarean section.

DR. W. D. HAGGARD, of Nashville, emphasized the position taken by Dr. Kollock. He believes that when the profession fully realizes the immense difference in the number of lives saved by Cæsarean section over craniotomy, there will be no doubt as to its preference to the latter operation.

DR. HUNTER MCGUIRE, of Richmond, favored Cæsarean section. Some time ago he saw the report of a case by Dr. Thomas, of New York, where, in doing Cæsarean section, he proposed to take the uterus out of the cavity, and then open it. He thought this added very much to the danger of the operation, necessitating a larger opening, exposing the cavity of the abdomen a long time to the atmosphere, etc. He does not favor this procedure.

DR. L. S. MCMURTRY, of Louisville, said that a few years ago it would have been impossible for one to have presented the views that Dr. Kollock had, without meeting with violent opposition. Cæsarean section was then regarded as an extremely heroic operation, and until recent years the mortality therefrom was very great; but since it has been carried to the present degree of perfection by Saenger and others, it has strengthened the opinions of abdominal surgeons, who now consider it preferable to craniotomy. Within the last two months symphysiotomy had been brought before the profession and practised, as an alternative in certain cases for Cæsarean section. What the future of the former operation is to be, we were not prepared to say.

DR. ARCH DIXON, of Henderson, Ky., advised Cæsarean section in a case in which he was called in consultation, but the family physician insisted upon him doing craniotomy, which was done, and while every precaution was taken with regard to rendering aseptic the field of operation, the woman developed pelvic peritonitis and died within four days. He believed a Porro operation would have saved the life of the woman, and perhaps that of the child.

A Case of Extensive Hæmatocele Resulting from Tubal Pregnancy Rupturing into the Broad Ligament, was the title of a paper by Dr. W. D. Haggard, of Nashville. Although the fœtus was not found, that it was a case of tubal pregnancy with rupture into the broad ligament, is clearly established by the clinical history and post-mortem appearances, summarized as follows: 1. Patient confessed having had intra-pelvic trouble previously (presumably gonorrhœa), for which she was treated locally. 2. At the time of the accident, caused from jumping from a wagon, her menses were past due. As to how long, her statements were misleading. 3. There was a fitful yet persistent flow from the uterus during her entire illness. 4. Paroxysmal, colicky pains in lower abdominal and pelvic regions of frequent occurrence. 5. Existence of a tumor above the pubes, which she probably mistook for a gravid uterus. 6. Persistent refusal to submit to a digital examination, probably fearing the detection of her pregnant state.

Post-mortem Appearances.—a. Enlarged and softened condition of the uterus, with a patulous os, showing escape of a sero-sanguineal, stringy fluid. *b.* Enlargement of the left tube, with a well-defined cavity from which the fruit sac escaped. *c.* Existence of a deciduous membrane, as revealed by the microscope. *d.* Discoloration of rectum, produced by blood dissection around it, producing constriction and partial death.

Fibroid Tumor of the Uterus—Pregnancy—Rupture about the Fourth Month—Operation.—Specimen, by Dr. S. M. Hogan, of Union Springs, Ala. The woman, colored, was twenty-eight years of age, and from the symptoms and history of the case he was satisfied there was a rupture, and the probabilities were that it was about the fourth month of gestation. He was also of the opinion that the rupture did not immediately destroy the fœtus, that it continued to grow in its abnormal position. The speaker felt sure that if he had operated on the case immediately after rupture, the patient's life would have been saved. In all cases of rupture he would advise Porro's operation to be done immediately; that in all cases where the tumor is large or multiple, intra-mural or subperitoneal, with a sacciform dilatation of the posterior segment of the uterus, and the os above the pubic bone, or inaccessible, the same operation should be done. In all cases where the tumor is in front of the child, or blocking the passage, it should be done, provided the pregnancy has advanced to the full time, or there should be hemorrhage or rupture of the membranes, indicating that an abortion or miscarriage is imminent.

Afternoon Session.

A New Operation for the Radical Cure of Inguinal Hernia, by Dr. George A. Baxter, of Chattanooga, Tenn. Dr. Baxter presented a radically different operation in principle from any yet given. It consists in a prolongation of the incision, after the ordinary management of the sac and after ligation, through the internal ring into a more or less extensive laparotomy, as the exigencies of the case demand; lifting the neck of the sac into the abdominal opening above the ring, and its fixation there by a deep suturing, cutting off the sac close above the peritoneum and its closure by buried suture, and a final closure of the abdominal opening by this and a more superficial set of sutures, which pass across above the closed sac and peritoneum and underneath the deep fasciæ, which are intended to approximate the homologous tissues of the abdominal wall. The ring is closed with crucial sutures dipping over cord and traversing the tissues, and the seminal canal closed with deep suturing alone.

Points of originality claimed: A line of incision suitable for any inguinal hernia, and by the fixation of the sac above the peritoneum a deflection of all abdominal expulsive force from the ring and canal, and the thickened lining of the internal ring, and the method of closure of abdominal incision. Advantages claimed: Quick cure with avoidance of necessity of truss; deflection of expulsive force from internal opening and canal to abdominal parietes. Advantage in being able to approach constriction either from without or within. Avoidance of necessity for traction on sac or contents. Ample room for treatment in diseased conditions of sac or contents, including gut operation, is necessary.

The Cure of Inguinal Hernia in the Male, was the title of a paper by Dr. Henry G. Marcy, of Boston, in which he said, until recently, the cure of inguinal hernia in the male had been considered at the best accidental, and when apparently effected, generally doubtful and the hernia liable to return. The great majority of surgeons looked upon an attempt at cure as ill-advised, and believed operative measures should not be undertaken except in cases of strangulation. Dr. Marcy thought there was abundant reason for such conclusion, when judged from the earlier history of surgical procedures as attempted for cure. The essential surgical considerations for the cure of hernia were as follows: 1. Strict aseptic conditions. These pertain alike to all modern surgical procedures. 2. A free dissection. This is necessary in order to lay bare the internal ring, to permit of the enucleation of the peritoneal sac, and the separation and elevation of the cord out of the wound. The external epigastric artery often courses in the line of the incision. It is not seldom that the size of this vessel is such that the operator fears he has wounded the larger vessel. 3. The disposition of the sac. The separation of the sac to its very base before removal is to be recommended as the rule. There are times, however, when it is not easy to free the peritoneal pouch, owing to adhesions to the surrounding tissues, and in large old irreducible hernia, a more or less intimate fusion of the contents to the inner wall of the sac. It is generally better to open the sac before ligating or sawing through its neck, since by so doing the condition at the internal ring is assured and by such knowledge the operator is often profited, even if the sac is completely empty; not seldom the omentum is adherent at the internal ring, and even a constricted loop of intestine may escape observation when it is attempted to return the sac unopened.

Dr. Marcy closed his paper by saying that between three and four millions of people living in the United States were subject to hernia; and, if the demonstration is complete that the risk of life is less than one per cent. from the operative procedures instituted for cure, and that scarcely more than ten per cent. are subject to relapses, and these almost invariably in a state improved by the operation, the plea is a very strong one, to consider favorably the advisability of operation in a very large majority of all the sufferers from hernia.

The Treatment of Umbilical and Ventral Hernia, was the title of a paper read by Dr. W. H. Wathen, of Louisville. He said the importance of studying carefully the best methods of treating hernia is now especially emphasized, because of the increased frequency of the disease following laparotomy, and especially because the modern methods of surgery make the operation far less dangerous than it formerly was. The operation for radical cure of hernia in the practice of the best surgeons, except in extreme cases, is practically devoid of danger, and the result may be made permanent. Modern antiseptic and aseptic precautions have practically excluded the danger which formerly arose from infective peritonitis. The author said there are many cases of ventral hernia that could have been prevented, had the proper treatment been carried out in the closure of the abdominal wound. In order that there may be no hernia following laparotomy, it is necessary to get perfect union by adhesion of all the layers of tissue forming the abdominal wall— the peritoneum, muscles, the deep and superficial fascia, and the skin; but especially must we get union of the layers of fascia, for unless this be done the other layers will gradually separate, and hernia will follow. This cannot be done unless we succeed in bringing the cut edges of the fascia in even and perfect apposition long enough for strong union to occur.

SECOND DAY, WEDNESDAY, NOVEMBER 16TH, MORNING SESSION.

The Treatment of Ununited Fractures by Resection, was the title of a paper by DR. W. O. ROBERTS, of Louisville. He said the treatment of ununited fractures by resection was more than a hundred years old, White, of Manchester, having done the first operation in 1760. In consequence of the great mortality attending the operation it was abandoned, until revived by Sir Benjamin Brodie. In 1805 Horeau, after having divided the fragments obliquely, fastened them together by tying a metallic wire around them. Rogers, of New York, in 1838, passed the wire through holes drilled in the wall of the fragment, and then twisted it. Since then other surgeons have used sutures of various materials in the same way; some of them leaving the sutures in permanently, while others removed them after union of the fragment had occurred. Some, instead of drilling the bone, passed the sutures simply through the periosteum. Screws, nails, ivory pegs, and clamps have been used for the same purpose. In the long bones, when co-aptation of the fragments can be secured, Dr. Roberts feels satisfied that resection and a fixed dressing will be followed by just as good results as when sutures or other contrivances for fastening the ends of the fragments together are used.

Symptoms of Fracture; Their Importance and Significance.—DR. W. C. DUGAN, of Louisville, read a paper on this subject.

DR. BEDFORD BROWN, of Alexandria, Va., related the case of a boy who sustained a compound comminuted fracture of the skull in 1860, yet he was perfectly conscious and had no symptoms of compression of the brain. The spiculæ of bone were removed, and recovery followed.

DR. J. H. LETCHER, of Henderson, Ky., advised against the too hasty resort to the use of trephine and chisel in injuries of the skull.

DR. C. KOLLOCK, of Cheraw, S. C., had trephined in two cases with successful results.

DR. J. H. MCINTYRE, of St. Louis, reported a case of traumatic insanity in a railroad employee, in which he trephined with success. The fracture was an extensive one and occurred in the upper Rolandic region. He reported several other interesting cases.

DR. WILLIAM WARREN POTTER, of Buffalo, called attention to fracture of the internal table of the skull without fracture of the external; hence the great liability to error in diagnosis.

DR. HOWARD A. KELLY, of Baltimore, related the case of a man who fell and was brought to the Presbyterian Hospital in a comatose state. Careful examination revealed the fact that the man had diabetic cataract with fracture at the base of the skull.

DR. WILLIAM T. BRIGGS, of Nashville, had trephined in fifty cases of epilepsy. Four fifths of the cases operated on were relieved temporarily, but not permanently.

DR. T. A. REAMY, of Cincinnati, mentioned the case of a man who had fallen from the second story of a courthouse, sustaining a fracture of the skull, but had never had epilepsy or any bad symptom following the injury. He thought this case would be some comfort to the country practitioner, who did not enlarge the scalp wound in all cases.

The paper was further discussed by Drs. Vance, Lydston, Nicolson, Greenly, and Dexter, all of them favoring radical measures in the treatment of injuries of the skull.

DR. L. S. MCMURTRY, of Louisville, read a paper entitled "Ovarian Cystoma with Twisted Pedicle and Peritonitis; Ovariotomy in Second Week of Typhoid Fever; Recovery."

Intestinal Anastomosis by a New Device.—A paper was read by DR. H. HORACE GRANT, of Louisville, with the above title. For more than a year the speaker has been endeavoring to perfect some instrument to simplify direct suture, but it has been so difficult to get just what he wanted, that time has not been allowed since the completion of the instrument to test it fully. It is to be used only after resections. The two blades of the clamp are oval scissors one-fourth of an inch in transverse, and two and a half inches in longitudinal diameter. The arms of the clamp are made long enough to allow of introduction full five inches. After the gut is exposed, a strand of iodoform gauze is passed through the mesentery and constricts the intestine fully six inches from each point of intended resection. The mesentery is tied off over the portion to be resected with fine silk, in two-inch loops, cut close and dropped in the usual way. When the resected portion is removed the gut ends may be washed out if desired. While the two ends of the divided intestine are held parallel, one blade is entered in each, allowing at least one and one-half inch of gut beyond the proposed anastomotic opening, to permit of invagination of the ends. The clamp is tightened, and the two surfaces thus firmly held are rapidly stitched together by a continuous overhand Lembert suture of fine silk. Two rows of parallel sutures, as suggested by Abbe, may be used if desired, though it has seemed that one is enough, according to the author's experiments. The work can be done far more rapidly and accurately than without the clamp. When the suturing is finished the clamp is tightened, if need be, and long-bladed dressing-forceps passed in the bowel, and the oval plug removed or pushed in. The scissors action of the blades, together with the ten or fifteen minutes pressure, prevent any hemorrhage. The clamp is now withdrawn and the ends invaginated in the usual way.

DR. A. V. L. BROKAW, of St. Louis, thought the instrument exhibited by Dr. Grant a good one, and said that anything which materially assists the surgeon in making intestinal anastomotic operations rapidly was of great value; that time was a most important element. The use of rings, plates, and mats in the past were bad. He believes that we can suture far more rapidly with Dr. Grant's instrument than with any other device he has thus far seen.

DR. W. E. B. DAVIS, of Birmingham, Ala., believed a large number of operators had abolished mechanical devices in doing intestinal anastomosis. His brother (Dr. John D. S. Davis) had devised a rubber plate and mat, but now prefers not to use the plate. In the case of resection of the bowel, he thought the device of Dr. Grant was an ingenious one, inasmuch as it would facilitate the work of the surgeon and enable him to do an operation very quickly. He had conducted a series of experiments in an effort to do away with mechanical devices, by which surgeons might use the end to end operation by splitting up the bowel. While the operation was successful in some cases, the strain on the circulation was too great, and he now condemns the operation.

DR. G. FRANK LYDSTON, of Chicago, directed attention to Dr. J. B. Murphy's anastomosis button, a recent device, by which he says cholecysto-enterostomies can be done in from eight to twelve minutes. (See page 665.)

AFTERNOON SESSION.

The Association was called to order at 2.30 P.M., with the First Vice-President, DR. C. KOLLOCK, in the Chair.

Annual Address.—The PRESIDENT delivered his Annual Address. He took for his subject "Compatibility of Conservative and Aggressive Surgery." He said the circumspect philosophy of former days taught us, what man has done man may do. But the developments of more recent times say, whatever is practicable may be undertaken, without regard to precedents; conservative and aggressive processes are combined in progressive surgery. Conservatism, in the use of all the appliances of surgery, is not inconsistent with the application of the most energetic means of relief in structural disorders. A misapprehension exists with many of our profession, as to the true sphere of progressive surgery, and it was the

purpose of President Gaston, on this occasion, to make a distinction between rashness in the employment of operative measures, and boldness in the use of surgical means of relief when clearly indicated. Real advances in surgical practice have not been the result of cutting and slashing without due consideration, but have accompanied the painstaking investigation of the conditions requiring the knife, and caution in the performance of operations. As a preliminary to any surgical procedure of a radical nature, correct diagnosis is essential, but to accomplish a proper understanding of a deep-seated disorder it is often requisite to make an exploratory operation of greater or less magnitude. The information based upon such an exploratory measure, serves as a guide to any further surgical procedure. Dr. Gaston said that ignorance and inexperience often lead to sad results in meddlesome surgery, when limbs are sacrificed or organs mutilated to gratify the desire to figure as a bold operator on the part of a would-be surgeon. In such cases no high-toned member of the profession should shield the culprit from the charge of malpractice, or from the assessment of damages by a court of justice.

A Plea for More Rapid Surgical Work.—This paper was read by Dr. Ap Morgan Vance, of Louisville, in which he said a great number of surgeons pay little attention to the time consumed in an operation, or to the nicety of manipulation and dexterous use of instruments that our forefathers prided themselves upon. He had seen on numerous occasions the work of our most distinguished surgeons, and had seen deaths occur from prolonged anæsthesia and too much time consumed in operation, which deaths would not have taken place if much unnecessary time had not been wasted. The habit of starting the anæsthetic before all preparations were completed was very reprehensible.

The paper was discussed by Drs. Arch Dixon, Rufus B. Hall, George A. Baxter, and Edwin Ricketts, all endorsing the position taken by the essayist.

Surgery of the Ureters, with a Report of Cases.—This paper was read by Dr. Charles A. L. Reed, of Cincinnati. He said that surgery of the ureter is one of the developmental subjects of abdominal surgery. These out-of-the-way conduits, exercising functions that are vital in character, were liable to diseased conditions which baffle the resources of the diagnostician and tax the ingenuity of the operator. For purposes of diagnosis, the physical means at our disposal may be briefly summarized as follows: 1. Exploration of the lower end of the ureters by digital examination, (*a*) through the vagina, (*b*) the rectum, and (*c*) the bladder. 2. Exploration of the lower end of the ureters by the sound passed through the urethra and bladder into the ureters. 3. Exploration of the central portion of the ureters by abdominal lumbar palpation—an expedient of practical value only in cases of extreme urethral distention occurring in very thin subjects. 4. Exploration of the upper end of the ureters by exploratory nephrotomy. Each of these several expedients might be amplified, but it would be uncalled for in the presence of such distinguished members. Dr. Reed said that since catheterization of the ureters has been popularized in this country, chiefly through Kelly, and since the technique of the procedure has become understood by those who have studied it, the diagnosis of disease within and surrounding these tubes is vastly more common. The digital exploration through the urethra and bladder is an easy expedient, so far as the surgeon is concerned, and often leads to the elucidation of important pathological facts; but the speaker is forced to believe that it is not without danger to the patient. He has been forced into this belief by one case of incontinence lasting for nearly a year, and by two cases of weakened power of retention, one of which is now of quite two years' standing. Dr. Reed said that abdominal section for diagnosis of urethral conditions, notably in cases of suspected calculus, is entirely justifiable. He then reported a case of peri-urethritis; stricture; kolpo-cysto-urethrotomy, with recovery. The second case was one of cicatricial stricture of an excised ureter; hydronephrosis; nephrectomy, remaining urethral disease.

Specialism in Medicine, Particularly as Related to Surgery and Gynecology, was the title of a paper by Dr. William Warren Potter, of Buffalo. He summarized his argument thus:

1. There is essential need for specialists. Divisions of labor in every field are demanded, and nowhere more than in medicine.

2. Specialists being a necessity, they must equip themselves by years of study, and devote themselves to a still greater number of years of general practice, before they are justified in offering themselves as specialists.

3. They must conduct themselves in such a way as to merit the respect of the general practitioner, and to invite his co operation in their work.

4. The unwritten ethics of specialism demand that there shall be reciprocal relationship maintained, not only among specialists themselves, but also between specialists and general practitioners.

5. The opportunities for perfection in special lines of medical study are so great, and medical literature in both journalistic and text-book form is so rich, that an awful responsibility is entailed.

6. The schools ought to discourage any and all students who give promise of entering upon the practice of a specialty as soon as the college doors are passed, and before the swaddling clothes of the professional tyro are slipped.

The General Practitioner as a Gynecologist.—This paper was read by Dr. R. M. Cunningham, of Birmingham, Ala. He said the general practitioner should not undertake work that can be better and more safely done by the specialist, provided one is obtainable. He should be willing to do and attempt the most radical and dangerous operations when necessary to save life, provided a specialist or one better prepared to do the work cannot be obtained. In cases not necessarily dangerous, or in which life does not become more or less a burden, but in which a cure can be effected only by a radical procedure, but which may be materially benefited or symptomatically relieved by milder methods, he should adopt the latter and not the former. In many cases the field is clearly his own, belongs to him, and he should be prepared and competent to treat them with safety and success.

Specialism in Medicine, was the title of a paper read by Dr. W. F. Westmoreland, of Atlanta. He said there were two kinds of specialists: The one with his preconceived ideas, which become warped, who always suffers from astigmatism, etc., who is a graduate of his kind. The other kind was the man who has worked his way by his generally acknowledged ability in any particular line.

A Preliminary Report on the Morphology of Ovarian and Myomatous Tumors, by Dr. Howard A. Kelly, of Baltimore. The speaker said the form of abdomen characteristic of large ovarian cysts is a globular or ovoid distention of a part or the whole of the abdominal wall, pushing out the infra-umbilical portion much more than the supra-umbilical, at least so long as the tumor occupies the lower half or two-thirds of the abdomen. This enlargement is uniform in parovarian cysts and polycystic tumors exhibiting but few bosses, due to the fact that the latter are composed of one or two large cysts associated with a mass of smaller ones; and the large cyst is best accommodated in the median line in the distended concave anterior abdominal wall, while the smaller ones at the side or back consequently do not show. Prominent exceptions to the general rule just enunciated, that pelvic tumors distend most markedly the inferior abdominal zone, are the notable stretching of the upper abdomen in very fat women with large ovarian tumors, and the like distention in rachitic dwarfs in advanced pregnancy. Nodular myomata, on the other hand, stand out in marked contrast to the smooth outlines of cystic tumors, in giving to the lower abdomen a lumpy, bossed appearance,

thus exhibiting through muscles and skin a softened exaggeration of their irregular outlines. This peculiarity still remains prominent, although softened, after these tumors have undergone fibro cystic degeneration.

Cystic tumors filling the pelvis and part of the abdomen are but rarely found to originate in some upper abdominal tumor. The speaker presented for demonstration a photograph of an enormous kidney, containing over a gallon of pus, extending from the pelvis floor up through the abdomen, and pushing up the left ribs.

THIRD DAY, THURSDAY, NOVEMBER 17TH, MORNING SESSION.

The Present Status of Drainage in Surgery was the title of a paper by DR. A. M. CARTLEDGE, of Louisville. The following summary was presented:

1. The principle of artificial drainage in surgery, while very ancient, was imperfectly understood, and was oftentimes as much a factor for evil as for good.

2. Though our knowledge of the principles which govern a healthy regeneration of wounded structures has greatly advanced, and our progress in wound therapeutics kept pace, we fail to appreciate how artificial drainage can be altogether dispensed with in surgical practice.

3. To lessen the use of artificial drainage it is necessary to thoroughly apply the principles of asepsis and antisepsis, combined with buried sutures, fixation, and alimentary or systemic drainage.

4. Where from any reason the production of a serum cannot be controlled, its removal by drainage is a safer surgical measure than any attempt at sterilization *in situ*.

5. The time required for primary drainage is from twenty-four to sixty hours; to wait longer is to encourage trouble; to remove sooner than twenty-four hours is taking risks not warranted in the premises.

6. Capillary is to be preferred to tubular drainage in wounds other than those of the large cavities. For this purpose absorbable material should be selected, catgut being the best.

7. Where it is desirable to combine hæmostasis and drainage in the same measure, the strips of iodoform gauze, as recommended by Mikulicz, fulfil a most useful purpose.

8. Where natural drainage can be utilized without producing unsightly cicatrices, artificial drainage should be dispensed with; when feasible, combine the two.

9. Wounds involving the brain and cord had best be drained, to avoid mechanical violence to the function of delicate structures by retained serum.

10. Necessity for artificial drainage will most often arise in wounds invading the large cavities; here flexible tubular drains (glass) best meet the requirements, aided or not by materials acting by capillarity.

11. The method of secondary suture after primary wound secretion is over, advised by Kocher, seems to possess no advantage over drains that have to be removed, and certainly is not to be compared in convenience, comfort, etc., to the patient, to absorbable capillary drains.

The Treatment of Tubercular Peritonitis.—This was the title of a paper by DR. WILLIAM H. MYERS, of Fort Wayne, Ind. He said when we have arrived at the conclusion that peritonitis is present, and have discovered the cause, the blow must be struck simultaneously with the onset. No delay can safely be tolerated, the only hope of rescue being the sudden arrest of the disease. By the time that the normal outlines of the abdomen are obscured by tympanitic distention, respiration quickened and shallow, the pulse rapid and wiry, the supreme moment for precise diagnosis is passed. Abdominal section for tubercular peritonitis was the most recent triumph of surgery. Dr. Myers had treated three cases of tubercular peritonitis by abdominal section, washing out the abdominal cavity, and drainage, with complete recovery.

Bacteriological Research in its Relation to the Surgery of the Genito-urinary Organs, was the title of a paper by DR. G. FRANK LYDSTON, of Chicago. The author said that, in his opinion, modern bacteriological and pathological research has nowhere been more productive of scientific and practical progress than in the special field of genito-urinary surgery. He would not attempt to decide the question as to whether, under certain circumstances, the microbial organisms which are constantly to be found in the secretions of the genito-urinary tract, are causal factors in pathogenesis of various forms; or, on the other hand, to decide the precise relation of heterogenetic organisms to the same morbid processes. The relation between what may be termed the normal germ and germs of non-pathogenic properties must certainly be left to the practical microbiologist. We are warranted, however, in drawing certain inferences and making certain practical deductions from what we know of the evolutionary laws of progression, differentiation, and adaptation to environment; many of the diverse forms of disease of microbial origin were doubtless embraced under the omnibus term of urinary infection. The present state of our knowledge does not admit of arbitrary differentiation between them. It is sufficient to say that many forms of organic and functional change affecting the genito-urinary tract are of microbial origin. These processes range in severity from a general infection with effusion and perhaps suppuration in joint cavities, to so simple a local lesion as a chronic prostatic irritation. The author quoted the researches of such modern authors as Reginald Harrison, Halle, Rovsing, Krogius, Bumm, Albarran, and Guyon.

Ovariotomy in Old Women.—This paper was read by DR. JOSEPH TABER JOHNSON, of Washington, D. C., in which he reported three cases, and felt quite sure that prolonged anæsthesia and manipulation within the peritoneal cavity would have proved fatal. The first patient was sixty-seven years of age, and the tumor removed weighed 52 pounds. The second case was one of multilocular ovarian tumor. The patient was sixty-eight years of age, and the tumor weighed 64 pounds. On October 10th of this year, he removed an ovarian tumor weighing 56 pounds from a lady who was sixty-seven years of age, but who looked to be one hundred. Improved methods, quicker operations, antiseptic technique, and provisions against shock, show 33 recent cases, between the ages of sixty-seven and eighty-two, with only two deaths, against 24 cases, done twenty years ago, between the ages of sixty and sixty-seven, with a record of six deaths. These figures demonstrate, in addition to improved technique, the surprising fact that old age is no contra-indication against ovariotomy.

The Simple, Septic, Traumatic, and Specific Forms of Cervicitis and Their Treatment, was the title of a paper by DR. BEDFORD BROWN, of Alexandria, Va. Simple cervicitis arises alone from simple causes. It never originates from infection of any kind. It could exist for an indefinite period without infecting surrounding structures. For many years the author, in the treatment of this affection, has addressed his remedies to the interior of the cervical canal alone, whether he used nitrate of silver, sulphate of copper, carbolic acid, or iodine. Septic cervicitis arises always from septic infection of the pelvic structures connected by lymphatic communication. Contact with the os of portions of putrescent placenta, membranes, coagula, or septic discharges from diseased uteri, were the common causes. Antiseptic measures alone could counteract septic infection and inflammation, whether in the form of septicæmic fever or local inflammatory action. All other agencies were simply palliative or adjuvant in character. Traumatic cervicitis was simply inflammation and congestion of the cervix from wounds inflicted on that body, either during labor, abortion, or from the use of dilating instruments. The author treats this form of cervicitis by means of a solution of nitrate of silver, varying in strength from a scruple to half a drachm, applied in the canal and over the entire cervix. He finds that most of his cases of [illegible]open, and

all cases of concealed, wounds heal by this method. Specific cervicitis may arise either from gonorrhœal or syphilitic infection. In the early stages he resorts to douches containing peroxide of hydrogen in the proportion of one part to three-fourths of boiled water, and also permanganate of potash, one grain to the ounce of water.

Shock.—Dr. James Evans, of Florence, S. C., contributed a paper on "Shock." The speaker said in the severe injuries inflicted on the body by accident, and in the major operations of surgery, not the least element of danger to life is the condition known as shock, which rapidly supervenes. The degree of shock, is not determined solely by the extent and gravity of the physical injury. Certain idiosyncrasies of constitution, the character of the force which inflicted the injury, and the circumstances under which it occurred, are potent factors in its determination. Individuals of a highly wrought and exquisitely nervous organization bear pain with far less fortitude, and are more susceptible to shock than those of dull, obtuse intellects and blunted sensibilities. The author reported a case in point. In laying the foundation of a bridge across the Pee Dee River, in South Carolina, an immense block of granite, weighing over a ton, was being lowered into a pit forty-four feet in depth, at the bottom of which was a man who was to direct when it was in proper position. When this huge block of stone was suspended over the pit the cable holding it began to slip, and the man below was warned to crouch in a corner, as it would inevitably fall. The rock did fall, and the man in the pit miraculously escaped without injury, but he was taken out in a perfectly lifeless condition, and was exceedingly ill for more than a week.

A Manipulative Mistake and its Consequences.—This paper was read by Dr. George Ross, of Richmond, Va. The author related the case of a woman who had suffered from unremitting, agonizing tenesmus, the result of a mass which she carried for seven years in her bladder, and which proved to be on inspection a pledget of absorbent cotton, once saturated with iodine, in shape a truncated cone, and thinly incrusted with phosphate of lime. The patient believed it was introduced by her first physician, who, when attempting to apply any intrauterine dressing, mistook the urethra for the cervical canal.

Harelip Operations.—Dr. William Perrin Nicolson, of Atlanta, Ga., made some remarks on "Harelip Operations," in which he advocated the use of a simple suture instead of a pin, and also recommended paring the edges.

Cholecystotomy, with the Report of a Case, was the title of a paper by Dr. Edwin Ricketts, of Cincinnati, O. He had operated thirteen times for obstruction of the gall-ducts. The patient, a lady, thirty-four years of age, married, consulted him last June. She had never suffered markedly from jaundice, nor from acute attacks of hepatic colic, no marked distention over the region of the gall-bladder; abdominal wall at least three inches in thickness; some general tenderness of the liver elicited by percussion. The patient had the characteristic putty-colored stools, and was losing flesh rapidly. The author advocated allowing a glass drainage-tube to remain in until the common duct was opened, and then, if necessary, to make an anastomosis between the gall-bladder and the duodenum.

Election of Officers.—The following officers were elected: *President*, Dr. Bedford Brown, of Alexandria, Va.; *First Vice-President*, Dr. Joseph Price, of Philadelphia; *Second Vice-President*, Dr. George A. Baxter, of Chattanooga; *Secretary*, Dr. W. E. B. Davis, of Birmingham, Ala.; *Treasurer*, Dr. Hardin P. Cochrane, of Birmingham.

The next place of meeting will be at New Orleans, La., on the second Tuesday in November, 1893. Chairman of Committee of Arrangements, Dr. Albert Miles.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

SPONTANEOUS CURE OF PERITONEAL TUBERCULOSIS—TUBERCULOUS ULCERATION OF PHARYNX TREATED BY LACTIC ACID—"CAISSON" WORK IN BLADDER-SURGERY—THE ADJOURNED DISCUSSION AT THE OBSTETRICAL SOCIETY ON ABDOMINAL SECTION IN PELVIC PERITONITIS—PREVALENCE OF ZYMOTIC DISEASES—REAPPEARANCE OF INFLUENZA.

London, November 19, 1892.

Some interesting facts in regard to peritoneal tuberculosis were brought forward at the last meeting of the Clinical Society. Mr. Lawford Knaggs, of Leeds, related a case in which he had operated for ventral hernia on a young woman on whom laparotomy had been performed, five and a half years previously, for tubercular peritonitis. At the date of the second operation the patient had grown into a healthy and strong young woman; and, on opening the abdomen, no traces of tubercle could be discovered. Mr. Howard Marsh mentioned a case of well-marked abdominal tuberculosis, where laparotomy was performed in consequence of pronounced ascites. Within four or five days the patient began to mend, and she left the hospital well in a couple of months. The behavior of tubercle in the peritoneum was remarkable; there was no doubt that in certain cases the tubercle formation underwent necrosis and disappeared. Mr. Bruce Clark spoke of a case of peritoneal tuberculosis in which he opened the abdomen and irrigated. The patient recovered completely, and no trace of tubercle could be found eighteen months later, when an ovariotomy was performed on the same patient. Dr. Glover narrated the case of a boy, between eight and ten years of age, who was believed to have peritoneal tuberculosis, and in whom hard masses of tubercle were found on rectal examination. The boy, nevertheless, got well without operation. Dr. Goodhart said it was undoubted that tubercular peritonitis might undergo spontaneous cure. He had once made a post-mortem on the body of a lady who had some years previously suffered from a typical attack of tubercular peritonitis; only a few scattered caseous masses were found at the autopsy, but there were numerous adhesions. Mr. Howard Marsh gave a brief account of a case of this kind in which laparotomy was declined, but the patient recovered. Dr. Barlow remarked that the cases which did best were those where a fair amount of fluid was present. These were cases in which there was a deposit of miliary tubercle on the peritoneum, and these were the cases which recovered after, or without, operation. Dr. Hadden said he had made a post-mortem examination in the case of a child whose abdomen had been opened two months before, when the peritoneum was seen to be covered with miliary tubercle. No trace of tubercle was found after death, and the glands were not enlarged or caseous. The President (Sir Dyce Duckworth) said that in no part of the body did tuberculous lesions fare better than in the abdomen. He agreed that the most favorable cases were those in which there was some ascites.

An encouraging example of successful treatment in tuberculosis was brought before the Medical Society of London, at its last meeting. Dr. Percy Kidd showed a woman who presented simply a large cicatrix of the pharynx, with some small nodules over the base of the tongue. Last Christmas she was suffering from tuberculous ulceration of the pharynx, associated with a good deal of pain—especially on swallowing. He applied cocaine, and then brushed the pharynx over with a fifty per cent. solution of lactic acid. Later on the pure acid was applied, and thorough cicatrization ensued.

At the same meeting of the Society, Mr. Hurry Fenwick made a communication on what—borrowing an engineering term—he termed "caisson working" in blad-

der-surgery. The method he employed was as follows: The patient was nearly always placed in the Trendelenburg position. Rectal bags were not used. The bladder was then opened above the pubes—the opening being made just large enough to admit a thin white porcelain cylinder, which was sunk, without allowing any of the water in the bladder to escape, onto the spot where he had previously ascertained, by the use of the electric cystoscope, that the tumor was placed. The cylinders were of various lengths and sizes, according to the thickness of the parietes, the depth of the bladder, and the size of the area to be operated on (in his first case he had used a Ferguson's speculum). A Jacques catheter was placed in the cylinder when it rested on the bladder and siphon action established by suction from a syringe; the water was thus run out of the caisson and the tumor seen, dry and bloodless, at the bottom. By throwing in a beam of electric light, by means of Dr. Washington Isaac's incandescent "search-lamp," it became possible to remove the growth by forceps, with extreme accuracy and thoroughness. The method had proved of special value in the early stages of benign tumors, where the growth was often very small—also in removing small, sessile, secondary splashes of villous growth, which were often left behind untouched or unrecognized by the finger, after the main piece of the tumor had been wrenched or scraped off. If vesical growths were operated on earlier, the mortality of the actual operation would diminish, and even in epitheliomatous degeneration of the mucous membrane a cure might in some instances ensue. Mr. Fenwick said he based this belief upon an experience of over 100 cases of tumor of the bladder. The method could be used in bladder growth for curetting or cauterizing definite catarrhal or tuberculous ulcerations, for incising the mouths of sacs of encysted stones, and for marking out the lines of enucleation of the intravesical growth of the senile enlarged prostate. It was unfit for contracted bladders. He recommended the procedure on the grounds that only a small incision was necessary; that it avoided bruising and tearing of the bladder by the continual passage of fingers, etc., through the wound and bladder incision; that not only the main growth but the smallest patches of primary or secondary growth could be seen and accurately treated by shifting the caisson from place to place; that the base of the growth could be cauterized by means of a galvano-cautery point with safety and certainty, and because bleeding could be easily arrested before the patient left the table.

The adjourned discussion on Dr. Cullingworth's paper on "Abdominal Section in Certain Cases of Pelvic Peritonitis" was brought to a close at the last ordinary monthly meeting of the Obstetrical Society. A great want of unanimity among the speakers was evinced, so the debate cannot be said to have led to any definite conclusion. Dr. Gervis resumed the discussion, and remarked that if the title of the paper were carefully considered some of the objections taken to it would be lessened. Dr. Cullingworth had only proposed operative procedures in certain cases of pelvic peritonitis, and these would appear to be cases of recurrent peritonitis associated with "distinct swellings in the posterior quarter of the pelvis;" he would not hesitate to agree with this proposition of Dr. Cullingworth's. Mr. Mayo Robson said he preferred to discuss the subject on general principles. We did not hesitate to open and drain an abscess in the neighborhood of the cæcum, so as to obviate its bursting into the peritoneal cavity; why should there be any argument as to the propriety of dealing with a pelvic abscess on similar principles? Mr. Knowsley Thornton said the result of a careful study of Dr. Cullingworth's paper was to deter him from performing these operations. The mortality of eighteen per cent. could not in any way be justified by the mortality of the diseases themselves when let alone. Mr. John W. Taylor said he heartily agreed with the general tenor of every one of Dr. Cullingworth's propositions. Dr. Heywood Smith said ventral hernia had been mentioned as of frequent occurrence after abdominal section, but such an accident did not often happen, and was not to be weighed against the chronic invalidism and pain that the operation was intended to obviate. He entirely agreed with Dr. Cullingworth's proposition that it was safer to attack cases of pelvic suppuration from above than from below. Dr. Griffith said gonorrhœal salpingitis had been spoken of as frequent, but his experience was that it was neither easy nor common to obtain satisfactory evidence of the gonorrhœal origin of pelvic inflammations. Mr. Skene Keith drew attention to the length of time which often elapsed before recovery was complete in these cases. Dr. Cullingworth replied at some length in defence of his propositions.

Zymotic diseases are very prevalent. The metropolitan epidemic of scarlet fever shows some signs of abating, but the disease is spreading in the provinces. Both measles, small-pox, and diphtheria are also very active. Influenza has reappeared, and one death is reported at Greenwich.

New Instruments.

A COMMON-SENSE BED-PAN.

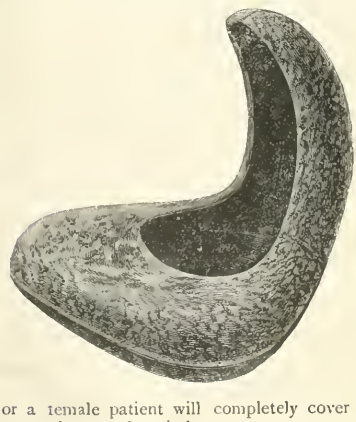
By LEONARD W. BACON, JR., M.D.,

NEW HAVEN, CONN.

I WOULD like to call attention to a new bed-pan, designed in the hope of providing, for patients unable to leave their bed, a more convenient and comfortable utensil than has hitherto been procurable in the market, and, at the same time, of furnishing their attendants with an instrument which can be kept easily and readily in that cleanly and aseptic condition so absolutely necessary in an instrument of the kind, yet so difficult to attain with the ordinary form of bed-pan.

This new instrument is a radical modification of a bed-pan designed by Hermann Haertel, of Breslau, and made and used in Germany.

From this German instrument was derived the "horn," seen in the cut of the bed-pan below, which is intended to come up between the patient's thighs, and in either a



male or a female patient will completely cover in the perineum and external genitals.

By this device the urine and fæces, no matter with how great force they may be expelled, are conducted into the body of the pan beneath, without possibility of failure, and without the necessity of special adjustment or manipulation on the part of either nurse or patient. The inconvenience of having to use a "duck," or urine bottle, at the same time with the bed-pan, is thus done away with.

In cases of perineal section, or other conditions involving incontinence of urine or of fæces, the bed-pan which I have designed can, because of its careful adaptation to the anatomy of the parts, be left for some hours under the patient without discomfort or danger of bedsores. The "diaper," commonly in use in such cases, is at best an uncomfortable, inconvenient, and even a dangerous thing on account of the maceration of the skin and the chances of infection. As compared with the "diaper," a comfortable bed-pan is certainly a distinct improvement.

The cover of the pan proper, upon which the patient's sacrum and buttocks rest, is carefully moulded to fit the parts. On either side there is a boss in the cover, coming just external to the posterior spinous processes of the ilia. These bosses form between them a shallow trough which receives the sacrum comfortably, while a due proportion of the weight of the body is supported upon the fleshy part of the buttocks, instead of resting entirely upon the bony structures of the sacral region.

The instrument in question does not form a wedge behind as most bed-pans do, but is thickest at the posterior edge of the pan. A little thought will show that this conforms to the anterior convexity of the lumbar spine. In fact, when a patient is placed in position with his buttocks elevated upon one of the old "shovel" bed-pans, the weight of the patient's trunk rests entirely upon the buttocks and the shoulders, so that there is room at the end of the bed-pan to place the open hand, edgewise, between the bed and the small of the back. The only exception to this would be in the case of a patient in the most extreme degree of relaxation and debility, and even then only with the thighs flexed on the abdomen. In these cases, when the body is doubled together in such a bent and unnatural position, the acts of urination and defecation are performed at great disadvantage and often with much difficulty, as the abdominal muscles have not the opportunity to exert their pressure and the expellent forces have to work literally "up hill."

The form which I have given to the posterior end of my bed-pan, while it does not necessitate raising the patient's buttocks any higher than do other bed pans, at once takes advantage of this waste space to increase the capacity and facilitate the cleansing of the instrument, and, for the feeble, provides a comfortable support to the back as high as the third lumbar vertebra.

The number of patients acutely ill, who, in spite of their best efforts to use a bed-pan in the recumbent posture, find it extremely difficult or impossible to do so, is by no means small. The physician, when he calls, not infrequently learns to his chagrin that his typhoid or puerperal patient, upon whom he has most strictly enjoined the recumbent posture, has been out of bed to attend to the wants of nature, despite his injunctions as physician and the best efforts of patient and attendants, to obviate the awkward difficulty. In such cases the new bed-pan is especially serviceable.

If the instrument is adjusted under the patient while lying down, and is placed, as it is intended to be placed in all cases, with the horn close up to the perineum, the patient, if feeble, may then have his shoulders propped up as high as may be necessary with pillows, or, if stronger, may raise himself into the completely sitting posture if he desire; the bed pan meantime will follow the movement of the pelvis, and will tilt forward like a rocking horse, being still entirely comfortable under the patient, who is in no danger of slipping off, or of soiling himself, or the bed, or of over-filling the pan, as provision has been made in the design to have the capacity of what would then be the lowest part of the instrument ample to receive any dejection.

The convenience of the nurse or attendant has been as carefully studied as that of the patient. The smooth, hard finish of the well-known agate-ware offers a surface as readily cleaned as china, while its lightness, as compared with crockery, reduces the weight of the instrument very materially. This bed-pan has no corners and every point in it is readily accessible to the hand.

The contents of the pan, whether solid or liquid, can be poured out through the horn of the bed-pan as through the nose of a pitcher. This bed-pan has a much greater capacity than the old "shovel" pan; it may also be held in almost any position without overflowing. A specially advantageous feature lies in the fact that this bed-pan can be easily carried with one hand, even when full, without danger of dropping the pan or spilling its contents.

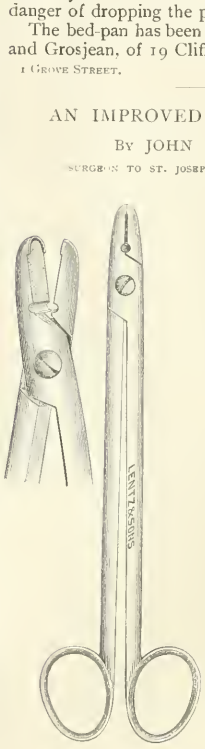
The bed-pan has been made for me by Messrs. Lalance and Grosjean, of 19 Cliff Street, New York City.

1 Grove Street.

AN IMPROVED SHOT COMPRESSOR.

By JOHN S. MILLER, M.D.,

Surgeon to St. Joseph's Hospital, Philadelphia, Pa.



Complicated surgical instruments, even if efficient, are not generally welcome to the surgeon. Simplifications of all details in rendering them aseptic, is most desirable. If an instrument can be made to do the work of two, and its mechanism is not complicated thereby, we would believe this to be an effort in the right direction. In gynecological operations where silkworm gut—or any other form of suture—is used with shot, a shot compressor is required, and also a pair of scissors to cut off the ends of the sutures. The instrument depicted in the woodcut is simply an ordinary shot compressor with simi-circular cutting edges at the points of both jaws. After the shot is compressed the instrument is slightly withdrawn and the suture is cut off, thereby saving time and lessening the number of instruments.

1917 Girard Avenue.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending December 3, 1892.

	Cases.	Deaths.
Typhus fever	2	0
Typhoid fever	16	6
Scarlet fever	110	10
Cerebro-spinal meningitis	0	0
Measles	77	5
Diphtheria	110	26
Small-pox	4	0
Cholera	0	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0

Sir Douglass Galton has been requested by the mayor of Florence to investigate the sanitary condition of that city, and to suggest methods for its improvement.

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Original Articles.

PRACTICAL EXPERIMENTS IN THE TREATMENT OF CHOLERA IN ST. PETERSBURG, RUSSIA, AND HAMBURG, GERMANY, IN THE EPIDEMIC OF 1892.

BY ELMER LEE, A.M., M.D., PH.B.,

CHICAGO, ILL.,

MEMBER OF THE AMERICAN MEDICAL ASSOCIATION; FELLOW OF THE AMERICAN ACADEMY OF MEDICINE; MEMBER OF THE CHICAGO MEDICAL SOCIETY, ETC.

THE result of the investigations made by men of many countries during the epidemic of cholera of 1892 which visited Europe and Western Asia is not yet fully reported. The intervals of epidemics of cholera are so wide apart that a continuous study of the practical side of prevention and cure is interrupted. By comparison the epidemic of 1892 in Europe has been more destructive than any epidemic during the present century. The whole number of deaths in Russia will amount to 200,000 souls. The rate of mortality has been on the average nearly fifty per cent. of all cases sick with the disease. This rate of mortality is almost the same as the rate which has existed in every epidemic of the century.

The promises that have encouraged Europe to believe that the time was near when epidemic diseases could be controlled by the knowledge gained through bacteriology have not been realized. The interesting work of the scientific laboratory has raised universal hope in every land; the expectation of relief from this storehouse of scientific wisdom concerning the nature of the real or supposed causes of cholera has not been able, during the epidemic of 1892, to lessen the mortality from cholera. Before the knowledge of the relation of bacilli to enteric diseases the death-rate was no greater than during the summer of 1892. The laboratory researches filled us with expectations of relief which were seldom capable of practical demonstration, and particularly is this true of cholera. While the scientific discoveries have been centred in Europe it has unfortunately been found that Europe is no better prepared to resist the spread of the epidemic diseases than are those countries in which there has been no laboratory science whatsoever.

The interesting and the practical side of an epidemic is to save the people from disease and from death. Whatever may be said by me is the result of experiences and observations in the cholera regions of Russia, Germany, and France during the summer of 1892. The views which will be expressed are the result of individual observation, and it is not my intention to present either statistics which have been presented before, or to at any length present opinions that may be either agreeable or contrary to the views taken by myself. The paper will be concerned with the experiences and the impressions that have been made upon me personally by actual contact with the practical side of the treatment of the disease of cholera.

A visit to Europe was undertaken for recreation and pleasure early in last May. When in Paris, during the month of July and the early part of August, information was received that cholera was epidemic in Southeastern Russia as well as in Western Asia. Further information from time to time showed that the epidemic was spreading to regions more or less remote, both north and west. There were at the same time reports of cases resembling cholera in various parts of France and in Paris.

When the cholera had reached as far north as Nijn Novgorod, and a short time later to St. Petersburg, the thought came to me that it was a duty that I owed to science and to humanity to go to these places and there determine the value of the views entertained by me concerning the practical management of an epidemic of cholera. These views were indicated to colleagues in Paris, information was sought in many directions in order to ascertain if the method which was to be proposed by me had been anticipated. During this investigation some slender reports came of a few cases of cholera in Havre and in Hamburg, but having determined to go to the centre of the cholera region, it was decided by me to carry out the plan of visiting Russia. So far as my investigations went among colleagues in Paris and also in Berlin, it was not learned that my system of cholera treatment had been anticipated.

The knowledge of the pathology of cholera was not clearly defined in my mind, but that it more nearly resembled a general entero-colitis than anything else was the first basis upon which my reasoning was founded. The information which had been derived from a study of the text-books concerning this disease had not been entirely satisfactory and conclusive. One view which seemed to be almost universal was that cholera is a disease resulting from the introduction of filth into the stomach and intestinal canal. This no one had ever disputed, and upon this basis, as a foundation for further thought, I built my plan of dealing with the disease. I said to myself that if cholera is the result of a filth taken into the stomach and intestinal canal, it is desirable, then, to do two things: one is to prevent the introduction of the filth into the body through the mouth, and the other is, the filth having been taken into the body through the mouth, the rational manner of treating the disease would then be to remove that filth in the most prompt manner.

The prevention of disease was the especial concern of the general and local boards of health and sanitary committees, and the responsibility of governments and communities. My direct connection with the necessities of the epidemic consisted in the practical means that would save the sick from suffering and from death. Finding that it was agreed by all medical men that cholera is dependent on filth which has been introduced into the stomach and intestines, it seemed to me that but one road was open to save the lives of cholera patients. If the disease depended upon an accumulation of products, of whatsoever nature and by whatever name they might be called, and these products could be removed from the intestinal canal, it seemed to me to offer a promise of cure to the cholera patient.

It had been determined by me, by a large and varied experience in America, before visiting Europe, that it was not only possible but practicable to empty the small intestines of their contents by a surgical procedure consisting of the introduction of an irrigating solution into the colon. Could this truth be demonstrated and proved upon actual patients in the cholera regions of Russia it would not only be creditable to the profession in America but it would alleviate very much suffering and go far to reassure the people that it was possible to treat cholera with better success than it had been treated up to that time.

I believed in the proposition so earnestly that I was willing not only to give my time and my services to the

Russian Government, but also to bear the necessary expense, in order to gain for myself the experience, which, if satisfactory, would be of use in the event of epidemics of cholera in my own country.

The proposition was made to the medical staff of the Oboukoof Hospital in St. Petersburg. The chief physician and his assistants said they could see no objection, and that it was their wish to afford an opportunity for a practical demonstration in cholera cases upon the plan presented by the American physician. At that time the cholera was at its height throughout all Russia, and there were reported in St. Petersburg, as many as six hundred cases of cholera in a day; in the hospital to which I was admitted there were one hundred cases. Not all the cases of cholera in St. Petersburg were treated in the hospitals, it was not obligatory upon the sick to go to a hospital, but, if upon investigation by the physician of the department of the city in which the case was reported, it was thought to be desirable for the best interests of the neighborhood as well as the individual, the patient would be removed to the hospital. The unfortunate prejudice which prevails in Russia among the poorer people against hospitals and physicians made it always a difficult matter to secure the co-operation of the friends of the sick and an early report of their sickness. Many cases would be kept from the knowledge of the authorities by the family of the sick, in order to avoid either the physician or the hospital. This prejudice is found everywhere in Russia, and is the inheritance of the people from their Asiatic origin.

The treatment of the sick brought to the hospitals is notably humane and kind, no country can be said to treat its sick with more consideration and skill than does Russia. The hospitals are marvellously well arranged and remarkably clean, and the system of protecting the sick from unsanitary and unwholesome influences would challenge the respect of the whole world. The physicians are men with large hearts and great ability, and in no country that has been visited by me have the physicians so reminded me of the profession at home as do the medical men of Russia. The appliances, and the general application of modern and approved ideas of the management and treatment of patients was to be found in a high state of perfection in the hospitals of St Petersburg. An American physician could not help but be deeply impressed with and mindful of the excellence and the scholarly attainments of the Russian physicians whom he would meet at these hospitals.

As soon as the formalities incident to the arrival of a foreign physician in a Russian hospital could be dispensed with, a practical opportunity for the treatment of cholera was afforded me. The proposition, which was made to the Russian physicians through a medical interpreter, consisted of the following plan of treatment:

I said to them that it was my belief that if the contents of the intestinal canal were removed at a time before the blood was overwhelmed with the absorption of the poisons from the intestinal canal, it was reasonable to expect satisfactory results; that this plan contemplated the practical application by myself of the proposition. The manner in which I proposed to experiment was stated to them and it received their approval.

The plan consists of the introduction of a soft rubber tube one metre in length, and of suitable size to be introduced into the rectum, in front of the promontory of the sacrum, into and up through the sigmoid flexure and into the descending colon. The tube, as has been found by experiments, should not be too small nor yet too large, in order to facilitate its introduction through the obstructing folds of the sigmoid portion of the lower bowel; the greatest difficulty which would be encountered would be to successfully pass the tube in front of the promontory and enter it into the sigmoid flexure. The size that has been found to pass the most easily is a tube that would correspond to a No. 48 in diameter, according to the French measurement. Smaller tubes may be introduced, but the interference by the pockets of the twisted sigmoid offer more resistance to the introduction of the smaller tube than it does to the larger one. It is also of the greatest importance that the tube should be of proper firmness to prevent it from bending or buckling upon itself when the end, which in all cases should be rounded, comes in contact with the obstructing fold of intestine. The tubes which were used by me in St. Petersburg were not of the kind that would most readily meet with the requirements, but, with a single exception, I believe the sigmoid and the descending colon was reached by the tube in every case treated by me personally. That there is difficulty in passing the promontory I am anxious and ready to admit, but that the difficulty is not necessarily so great as to prevent the introduction of a suitable tube I also maintain. The introduction of the tube is favored by the flow of the irrigating solution from its open end, in that the force of the flowing stream helps to lead the way in the twisting bowel into which the tube, when gently rotated and urged forward, may be made to pass. By this system of inducing a running stream of water, suitably medicated, into the colon, it is reasonable to expect to introduce the water as far as the ileo-cæcal valve, and I am satisfied that in suitable cases, when the pressure against the cæcum is sufficiently prolonged, the valve opens and admits into the small intestine some part of the water from the colon. This proposition is not necessarily new to my colleagues, but it is not entertained by all with whom I have conversed. But there is a principle which is, I think, sufficiently important and new, so far as its recognition is concerned, to justify a strong hope of splendid results in the future by the use of irrigation of the colon. The effect of a flowing solution of water through the colon, from the end of the conducting tube and back through the colon, through the sigmoid flexure, and into and out of the rectum through the opening which is made by the relaxation of the sphincter ani muscle, is to successfully and actually clean and purify the large bowel and all that is below it. Secondarily, the effect of the running stream upon the living tissue carries a sympathetic impulse to the muscular mechanism of the small intestine, which is equivalent to an increased peristaltic action of this part of the canal. By actual experience it has been demonstrated, to my own satisfaction and to the satisfaction of my Russian colleagues, that the secondary effect of irrigation of the colon is to cleanse and relieve the small intestine of its contents. The recognition of this splendid secondary effect gives the irrigation system, in the treatment of cholera, a usefulness which promises to revolutionize the treatment of cholera in the Russian Empire. The effect of passing into, through, and out of the large bowel a quantity consisting of two or three gallons of warm water, preferably medicated with soap, is not only to directly remove the accumulated contents of the large bowel, but secondarily, through the sympathetic nervous action of the muscular organism of the small intestine, to almost completely carry off its liquid contents, including every form of bacterial life. The value of this lesson had been learned by me in the treatment of various forms of entero-colitis, and to learn the value of the lesson in the treatment of that form of entero-colitis called Asiatic cholera induced me to set aside plans for recreation and pleasure and to go and prove for myself, and afterward for my assistants, what value the complete, thorough, and systematic irrigation of the larger bowel would have upon the different stages of cholera. When the intestinal canal is cleared of the hurtful and filthy mass which it contains, it gives great relief to the cholera patient.

I began my experiments at the Russian hospital under considerable difficulty, owing to the fact that I was unable to speak the Russian language, and there was, therefore, a lack of complete understanding of each other, but as soon as the first experiment had been completed the Russian chief physician expressed his satisfaction at the good results which were secured and ordered that further

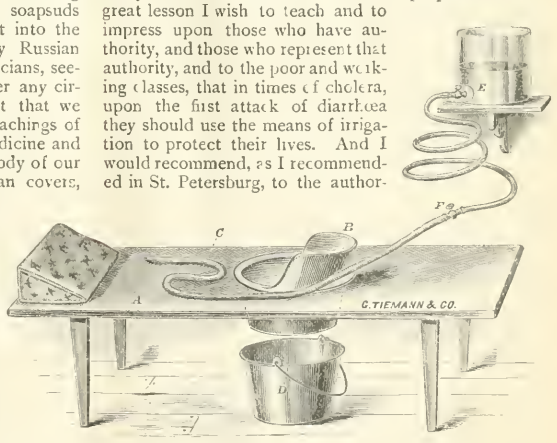
cases be provided for me. The second case treated by me resulted satisfactorily, but the treatments were made under unsatisfactory conditions, because the conveniences that were required had not yet been provided; still, the effects were so good that the co-operation of the physicians was soon secured. I strongly insisted from the first that to expect the full benefit from the irrigation the cases should be treated from the earliest moment of their arrival in the hospital, and finally the privilege of treating patients upon their arrival was accorded me.

The plan, as finally adopted, was to take the patient directly from the ambulance to the bath room, without delay, and when the clothes were removed the patient was laid on his back on the irrigating table with the knees drawn up and the muscles of the abdomen relaxed; then, without any waste of minutes, the long tube, after being lubricated with soap, was gently pushed into the rectum and urged by twisting and gentle pressure into the lower bowel as high as the tube could be made to go, and the stream of the previously prepared solution of warm water and soap, making a soapsuds, was allowed to run as freely as the tube would permit, into the colon, and when the colon became filled the pressure exerted would force the water to seek an outlet back through the bowel into the rectum and out of the opening around the outer surface of the tube into a properly constructed receiving vessel. I remember on one occasion calling the attention of the chief physician to the great and stinking mass of putrid matter which the stream of soapsuds had washed out of the intestine of a peasant into the receiving vessel, I made the remark to my Russian friend, how it was possible we modern physicians, seeing the nastiness before our eyes, could, under any circumstances, indulge ourselves in the thought that we were treating our patients according to the teachings of our enlightened civilization and antiseptic medicine and surgery; when we washed the surface of the body of our patients and laid them in beds, between clean covers, with such a quantity of putrefying, decomposing filth left in the intestines of these outwardly clean patients, every minute they laid in their supposed security their blood was feeding upon the foul poison that filled the intestinal canal. One of the strong practical medical lessons of my life is brought to me when I see the filthy contents of the bowels after their removal from the patient.

In my treatment, after the bowels of the patient have been cleansed he is then placed in a bath of warm water and afterward conducted to his bed, not only clean outside but, if not wholly purified as to the intestines, at least enough cleaner to promise freedom from further infection.

I have found that soap consisting of oil, potash, and glycerine, when added to warm water, is a disinfectant of the highest importance, and it is my conviction that the addition of drugs and chemicals of any nature only serve to complicate and confuse without improving the soapsuds solution in its value as a treatment of cholera bowels. I have experimented with many of the old and many of the new antiseptics and disinfectants added to the warm water irrigations, and am of the opinion that soap-and-water meets the requirements perfectly. Whenever it is thought necessary in the treatment of cholera the irrigation is repeated one or more times. The average number of times that irrigations were given in the treatment of cholera in St. Petersburg was twice, occasionally a third irrigation would be given, but frequently one irrigation was found sufficient. Within one or two hours after the soap-and-water flushing of the lower bowel the patient would have from one to three or four evacuations, which would be followed by an interval of rest and cessation of from twelve to twenty four or thirty-six hours. The relief of the spasm of the intestinal muscles, which produces the intense suffering, followed promptly upon the removal of the irritating contents, and the administration of morphine would not be required. In addition, whenever it was thought desirable—and it was thought desirable in nearly every case—the stomach was cleansed by irrigating it with a solution of salt and water. After this combined treatment, as soon as the patient was quiet, vomiting and purging, in most cases, would subside. As an internal treatment I recommended and used hydrogen dioxide diluted with distilled water, given in cupful doses at intervals of three hours. The object of the administration of the hydrogen dioxide was to further cleanse and disinfect the intestinal canal, and the distilled water was added to increase the bulk and remove the raw and objectionable taste of the hydrogen.

A plea was made by me to establish this system of treating cholera at the time of the first symptoms of the disease. The first symptom of cholera is a preliminary looseness of the bowels or a diarrhœa. The diarrhœa is the signal of warning which may be recognized by the most ignorant and careless peasant, as well as by those who are higher in the social scale. I believe that if all cases without waiting for a confirmatory diagnosis to be made by the bacteriological examination of the discharges, were brought under the influence of this treatment as a system of management, it would be reasonable to expect recovery in times of cholera, if not an entire escape from the disease. This last proposition is the great lesson I wish to teach and to impress upon those who have authority, and those who represent that authority, and to the poor and working classes, that in times of cholera, upon the first attack of diarrhœa they should use the means of irrigation to protect their lives. And I would recommend, as I recommended in St. Petersburg, to the authorities, the establishment in the districts of towns and cities of a simple but effective apparatus, to effectually cleanse the bowels by a process of irrigation with soap and water.



The irrigating apparatus is simple and would consist of a low table suitably made, which is represented in the accompanying illustration. The necessary apparatus required for irrigation has been provided, according to my drawings and directions, by the progressive house of Messrs. Tiemann & Co., of New York. I would have such an apparatus provided near the home of the poorer classes, as well as in every part of the city, and a physician detailed to receive and treat every man, woman, and child who should come with any symptom of looseness of the bowels or abdominal colic. Then, if thought desirable, the patient should be transferred to a hospital, or permitted to return home.

The loss of time between the first symptoms of cholera and the time of treatment is fatal, and this simple lesson should be taught, by the use of clean, wholesome English, to all the poor and the working classes, and they be made to realize the reasonableness of this plan of action, which would go far toward relieving the anxiety and terror that is present in cholera times. The public mind is overwhelmed with the feeling that cholera is a mortal disease,

and this feeling is increased by the unfortunate necessity that physicians are from time to time obliged to state that no treatment has been found satisfactory.

It will be interesting to recite my experience in the treatment of a Russian peasant boy, sixteen years old, who entered the Oboukoof Hospital in the morning with the typical symptoms of cholera, consisting, as it did in his case, of profuse vomiting and purging, with a cyanotic skin and cramps in the knees and other joints, as well as a colic from which the poor boy was bitterly crying between the intervals when he would vomit. When my Russian colleague and myself visited this boy upon his arrival, I was asked if I would treat this case, being a very severe one, to which I gladly responded, yes. He was removed to the wash-room and placed on his back on the low irrigating table, with his hips fitting into the basin, and the bowels were washed with the warm soap-and-water, the tube being introduced by myself. The effect was most gratifying. The bowels were relieved of a large quantity of nastiness, which made the patient slightly more comfortable at that time. He was next lifted into the bath of warm water and afterward conducted to his bed. He received during that day small cupfuls of diluted hydrogen dioxide as his only medicine. When I returned next morning to the barracks the Russian physician asked me if I had seen our patient, and I said no, fearing that possibly some misfortune had occurred. Whereupon, seeing my anxiety, he relieved me by saying, "Our patient is quite well." We went into the ward to look for the patient, but he was not there. We looked in other wards but could not find him, and did not find him in the barracks anywhere. The day was warm and bright and the boy was feeling so good that he had eluded his nurse and slipped out into the open air, where we found him seated on a bench with the convalescents, in a happy state of mind. This patient, it is hardly necessary to remark, was a great pride to me, and I may state that he received no further treatment in the hospital but was detained for a period of one week as a measure of prudence, which is the rule in the case of all convalescents.

The number of cases treated by me personally according to this system of management was 27; the total number of deaths were 3 and the recoveries 23, with one whose recovery was not complete at the time of my departure.

The number of cases treated by my system in the hands of the physicians of the hospital amounted to nearly one hundred at the time of my departure, but the final records of these cases are yet to be published.

The number of cases treated are not sufficient to entitle the system to more than a statement of the facts and a plea for further experience at the hands of other clinical physicians. The hospital staff in St. Petersburg accepted the lesson taught there as being so valuable that the system of irrigation with soap and water, according to the plan proposed by me, is to be given a trial of six months, in all cases of entero-colitis, including cholera, and at the end of the period of trial a final report will be made.

With this satisfactory outcome the system of treatment was tenderly committed by me into the hands of my foreign colleagues and my face was turned to Berlin and to Hamburg.

The epidemic at Hamburg, at the time I was admitted to the staff of physicians in the Epindorfer Krankenheitenhause, was on the decline. My admission to the staff of physicians was based upon the recommendation of Professor Virchow, seconded by Professor Guttmann, the intimate friend and colleague of Professor Koch. The experiments in the hospital at Hamburg were confined by me personally to two genuine cases of cholera, and the value of the treatment in these two cases was manifest to the cholera staff of physicians. It was a misfortune, and was deeply regretted by my eminent and distinguished friend, Professor Virchow, and others, that irrigation as a system of treatment had not been fully tried at the time of the height of the epidemic. It was the middle of August when I took my departure for Russia, and it was not until October 1st that I was able to visit Hamburg. My stay in the hospital at Hamburg lasted two weeks. I waited until the epidemic had ended, then went to Berlin and laid the facts before Professor Virchow and other medical gentlemen. Professor Virchow openly and freely commended the work that had been done, and presented his written congratulations to me, and otherwise treated me with affectionate regard.

I will state in this connection that the question of the etiology and spread of cholera and the value of quarantine measures and regulations is reserved by me for consideration at another time.

The value of my personal experiments in Europe during the epidemic of cholera of 1892 consists of the following conclusions:

1. Cholera is a disease which attacks the poor and the working classes.

2. The disease seldom affects the middle and the higher classes of society.

3. It is a disease which is transmitted by the discharges from the bowels and carried in particles of food and drink and on the soiled clothing of cholera patients.

4. It selects persons whose nutrition and nutritive organs are defective.

5. It has an especial affinity for the classes who live in the midst of and partake of filthy habits, and most especially for the intemperate and vicious classes.

6. The middle and higher classes of society are practically exempt from the invasion of cholera, and the fear and fright in which these classes indulge is without foundation.

7. The source of the infection and its method of transportation is not satisfactorily understood.

8. There are strong reasons for believing that cholera is spread by intercourse through travellers, and on the other hand there are strong reasons for believing that it is not so carried.

9. The scientific authorities of Europe are by no means agreed as to the exact manner of propagation of cholera.

10. The rated mortality of cholera in Europe in 1892 has not been materially different from the death rate of other epidemics during this century; the death rate has averaged very nearly fifty per cent.

11. Upon a review of the systems of treatment in Europe the rate of mortality does not show that medical science has been able by its scientific attainments to reduce the rate of mortality.

12. It is my belief, based upon my personal experiments, that irrigation as a system of treatment of cholera promises splendid results, and that if cholera cases could be treated early, by the system of irrigation, it would be reasonable to expect recovery, but in cases where the blood is already toxic it is not reasonable to expect recovery by any medical treatment.

13. It is my recommendation that in times of cholera suitable places be provided where the sick can be taken and treated by irrigation, without loss of time.

14. I would recommend that the poor and working classes especially be instructed in times of cholera, upon the recognition of any looseness of the bowels, to proceed at once to the nearest station which is properly provided with an irrigation apparatus, to be treated by physicians selected and paid by the city.

15. Should an epidemic of cholera prevail during some future time I would earnestly ask the co-operation of my colleagues to the end of further trials of irrigation as a reasonable and promising system for early treatment of cholera.

125 STATE STREET, CHICAGO, ILL.

Cholera in Hamburg.—The official reports state that there were about eighteen thousand cases of cholera during the recent epidemic in Hamburg.

DAYTIME ENURESIS IN CHILDREN.[1]

By JOSEPH B. BISSELL, M.D.,

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INCONTINENCE of urine in children during the daytime only is not a very frequent occurrence. I have met quite a number of cases in both sexes in the past few years. They can for the most part be classified into three sets.

The first and least common form of the daytime incontinence is that due to some local disturbance or irritation, as phimosis, worms in the vulva, vagina, or rectum, inflammation of bladder and urethra, stone, growths in the bladder, etc. The most frequent, as well as the most intractable of these cases are not the result of local irritations or lesions, but due to some constitutional or general cause. The two other classes are very opposite in every other respect, except as to their incontinence. To the second class belong the bright, cheerful, and for the most part intellectually over developed children, excitable and mentally hypersensitive, active, playful, and happy in their disposition. The third group of cases are dull, stupid, and slow in mind and muscles. Their general condition may be either poorly nourished, anæmic, and feeble, or simply phlegmatic, with all the muscular development in first-class order, excepting only neck of the bladder. These latter cases are hard to understand. It is easy to explain the enuresis when there is general muscular debility, and the incontinence is only one in a train of symptoms following insufficient muscular development. Incontinence often persists after treatment has relieved the general health. Such cases are mostly night incontinence, and do not come into the scope of this short paper.

A general dyscrasia, such as rickets or scrofula, is not nearly so productive of enuresis as is commonly supposed. Mouth-breathing children are said to be more subject to it than others. I have met with several cases in the early stage of Pott's disease. After the incontinence has continued for some time the bladder is very likely to be very much contracted, or over-distended, and thus a result now becomes a cause of the difficulty, so that after the origin of the trouble has been removed we have still to treat a secondary cause, which is often more troublesome and takes longer to relieve than the primary one.

Polyuria is more apt to be a cause of night-incontinence, but when this is due to some lesion of a nerve-centre incontinence during the day is a frequent result. I have seen cases of daytime enuresis due to diabetes, and to polyuria from other causes. Epilepsy in its milder forms may be first noticed in an intractable incontinence.

The treatment of the first class of these cases is very simple in theory. Find and relieve the cause, and then, if necessary, go on and treat the condition which has been left by the incontinence.

The second class, those who are active, spirited children, is most troublesome to treat and difficult to cure. The worst type of this variety is seen in little girls who are at school, ambitious, striving, and active mentally. All the blood in their little bodies is driven to their brain by pushing teachers or ill-advised parents. The muscles are weak, the general body-condition poor and anæmic, and incontinence is frequent. This escape of urine may occur while sitting at their desks, while at their lessons, at recitation, or in the excitement of the play-hours. Sensitive in proportion to their highly developed brain and nervous system this is a great mortification to them. It depresses their minds and they may be reduced almost to melancholia by their trouble. Treatment of such cases requires the utmost tact and judgment. The first thing to do is to put aside the books and turn their minds and brains from marks and prizes to thoughts that are healthier and less stimulating. A course of treatment which develops muscle and builds up the blood is indicated, a nutritious and easily digested diet, stimulation of the muscles and skin by massage, sea-bathing, alcohol sponge-baths, friction of the skin by a coarse towel, etc. Girls from six to twelve years of age or over are most intractable to treatment, and often there is no use expecting to get much relief until lessons and books are absolutely prohibited, and outdoor exercises and air take their place. Among drugs the principal indication is, first, general tonics, as for instance syr. ferri iodidi, syr. hypophos. with nuc. vomicæ; cod-liver oil, tonic doses of quinine, and arsenic for the bodily condition. The best drug for the local effect on the bladder-muscles is belladonna, but it must be given until dilatation of the pupil to a considerable extent is obtained; the effect of this drug must be carefully watched and the patient given a good deal of attention. Strychnine is a drug of value in these cases, for its general effect as well as for its power over the sphincter vesicæ. A suppository containing one-quarter grain of nux vomica introduced three or four times daily into the rectum has had a very good result. Ergot, internally, combined with belladonna or strychnine, answers the indications. Rhus tox., in repeated doses of a quarter of a grain of the powdered leaves, is said to be very efficacious. The electrical current has been recommended very highly by German authors for this trouble. It is, of course, a powerful local stimulant. One electrode is applied to the perineum, the other to the hypogastrium or lumbar region. I hesitate about using instruments in the bladder and urethra unless there is positive evidence of bladder or urethral disease or of foreign body.

Yet the skilful and careful introduction in a boy of a steel sound large enough to dilate the deep urethra and distend the neck of the bladder will often assist greatly in the cure of incontinence. Ordinarily, and in the ordinary way, the introduction of a sound or the use of deep injections is brutal, and likely to do a great deal of harm, if it fortunately does not set up a cystitis or urethritis which may be very difficult to cure. The introduction of a sound when necessary may have to be done under ether or chloroform.

The third class of cases, where the children have all the muscles active and healthy except those of the bladder, are most puzzling. Any probable tendency to, or, a constitutional disease is either to be excluded or treated. Very often these patients are troubled with no other ailments but this one. It may have begun as a nocturnal enuresis and continued as daytime incontinence. The sphincters of the rectum are often irritable and untrustworthy, complicating the bladder trouble.

The remedies mentioned above are also available in this class. It may be that, following a long-continued enuresis from local or other long-since removed cause, the bladder has become contracted or contractured. If so, treatment of such a case will be long and tedious, and cure will depend on appreciation of the physical condition, the internal remedies above-mentioned, and the patience of the surgeon and the patient. I have never seen good results obtained in these or similar contracted bladders by forcible or gradual distention by means of hypostatic pressure.

The muscles of the bladder, acting very like muscles elsewhere in the body, become strengthened and developed by exercise. Forcible distention is a dangerous and decidedly unsafe method.

In those patients where all other methods have produced little result, and where the bladder is not contracted, continued washing of the bladder twice daily with a simple salt solution will sometimes restore to a certain degree, if not completely, the tonicity of the vesical muscles, and bring about a cure. This measure is not always practical, and is attended with considerable risk, which may be reduced to a minimum, however, by a skilful surgeon, with clean catheters and hands and a tractable patient.

Occasionally these cases get well spontaneously, especially as they reach the period of puberty, at which time the genito-urinary system undergoes rapid changes in its development.

[1] Read before the Alumni Association of Charity Hospital, December 7, 1892.

AN IMPROVED METHOD OF PHOTO-MICROGRAPHY OF BACTERIA, AND OTHER MICRO-ORGANISMS.

Methods of Application and Analysis.

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The constant improvement in the art of photography, and its applicability in demonstrating the results of microscopic investigation of bacteria and other micro-organisms, makes it certain that, at an earlier day than investigators hoped, many of the now hidden mysteries of the animal, vegetable, and mineral kingdoms will be clearly unfolded to the inquiring mind of man. What are now, at best, only matters of conjecture, will be made as plain to the understanding as the most ordinary objects with which he is familiar. In other words, he will be able, by the combined aid of the camera and the microscope, to analyze the structure and life history of bacteria, and other micro-organisms, as readily as he may now view the process of manufacture of a needle or a pin.

That this is the future of scientific photo-micrography is evident to all advanced investigators in those special lines of research that demand continuous amplification of objects in order to analyze their minutest structural characteristics.

The possibilities of this style of scientific demonstration were first made apparent to the writer as far back as 1865, when in the United States Army Hospital, in Albany, N. Y., he found it practicable, through a series of experiments with the camera and microscope, to photograph various class-objects, by sunlight, with any desired enlargement. For example, the octohedral structure of the crystals of arsenious acid was shown clearly on the ground glass, despite the supposed hindrance to such photography caused by the refraction of light by the crystal. It was discovered then that there was none of the supposed blurring of the negative by refraction, but that the crystalline form was perfectly reproduced on the glass.

These arsenic exhibits were made at the time with the view of their utility as additional evidence in toxicological cases, supplementing the work of the analyst. These photo-micrographs of arsenious acid were afterward introduced as evidence in a case of poisoning brought before the Court of Oyer and Terminer, at Troy, N. Y., November 29, 1865, and were reported at that time to be the first application of photo-micrography to toxicology.

The various test objects embraced in these experiments were specimens in histology, pathology, entomology, crystallography, together with exhibits of vegetable tissue, diatoms, fosil radiolaria, urinary deposits, etc.

These slides and photographs, together with photographs of the apparatus with which they were made, are still preserved by the writer, the photographs having been exhibited by the President of the New York Academy of Medicine (Dr. E. R. Peaslee) at the stated meeting held March 22, 1871.[1]

The apparatus itself was similar to that by which the results obtained in 1891–92, hereafter described, with the exception of one of Lerebour's largest solar microscopes, owned by the Albany Academy and loaned me for this work. In my later outfit this has been supplanted by modern microscopes and objectives by Ross, Zeiss, and Leitz.

The experiments made since April, 1891, with this improved apparatus, have proved that a satisfactory negative made with sunlight may be successfully enlarged, and the sharpness and clearness of outline retained, until the very minutest detail of a micro-organism or other similarly minute object, is brought out with perfect clearness in the glass, positive or negative.

The usual magnification shown in photo-micrographs is between 1,000 and 10,000 diameters. In the experiments alluded to it has been found possible to reach and pass the point of 700,000 diameters of enlargement, still preserving the essential clearness of outline and amplification of detail.

This steady increase of enlargement from the ordinary enlargement is obtained by a series of threefold enlargements, that is to say, some interesting detail of the object under investigation is steadily reproduced, and enlarged threefold at each successive reproduction. Prints of each of these series of plates, positive and negative, were prepared and carefully compared, to make it plain that no defect of development had marred the work of enlargement.

Comparison of the positive and negative prints from the glass negatives and positives, indicated that what was obscured in the positive was made clear in the negative, and *vice versa*.

Three hundred photo-micrographs in series were made during these experiments, partly for the purpose of scientific investigation in certain lines, and also to test the possible limit of the process of enlargement. It was the discovery of the unexpected extent to which enlargement could be carried that indicated the near approach of the time when nature's secrets would be laid bare to the eye of the microscopist. Objects were selected which were certain to test the accuracy of the process of enlargement and reveal any distortion of outline, such as the diatom pleurosigma angulatum, etc. In pleurosigma angulatum, the work was rewarded by the discovery of a probable solution of certain points of structure which have been the subject of dispute between scientists.

The series of photo-micrographs included the following bacteria: spirillum cholerae asiaticæ, pure culture; spirillum undula; spirillum rubrum; bacillus leprae, bacillus typhosus; bacillus tetanus; bacillus tuberculosis, in pure culture, in sputum, in giant cells of human liver; bacillus anthracis, pure culture; bacillus subtilis; bacillus concentricus; bacillus megaterium; bacillus violaceus; gonococcus, micrococcus rosaceus; streptococcus; sarcina lutea, bacillus yanogenus; bacillus alvei. Also torula rosaceus, torula alba, actinomyces. Similar methods were pursued with several species of parasites, diatoms, etc.

The original incentive of these experiments was the possibility held out by the earlier results, of ascertaining if there was not a relation existing between a certain micro organism found on a negative of bacillus tuberculosis to the bacillus tuberculosis and other bacteria.

The negative was made on April 29, 1891; and the micro-organism was first noticed at the time that I was examining the negative, while still wet, with a hand-magnifier. The object appeared of peculiar outline, and perfect in form; about the size of three small pin heads placed in a row, and connected by a very fine hair-like line or filament. The upper one was slightly larger than the other two, which were about alike in outline. The larger was of similar size to the bulb-end of any of the bacilli on the negative. It excited curiosity, and suggested the possibility of being a rudimentary form of the bacilli in the negative.

Subsequently, from time to time, enlargements were most carefully made, and each enlargement brought out more and more details of perfect organization of the micro-organism. Amplification was carried up to the point of about 120,000 diameters, and unblurred detail still retained. This experiment resulted in a very clear and most interesting demonstration of a fully germinated spore, and this spore had thrown off filaments in different directions. Two of these filaments had two pod-shaped appendages each, and each contained nuclei. These spores, constantly enlarging, growing more detailed in structure as each reproduction was made, perhaps furnish an explanation of the mysterious growth of this group of bacteria.

Varieties of the bacillus tuber were subjected to the same process, and many interesting details of structure were developed.

[1] See Transactions of the New York Academy of Medicine, New Series, vol. i., part 1, page 3.

A photograph of spirillum undula was next subjected to the same process of enlargement, the reproduction being made from a negative made by sunlight.

Its distinctive cellular structure was shown, and full details of a novel and complicated system of spore germination were brought into view. It required very many photographs to follow out the different details of this germination, at so high an amplification as was necessary to produce the revelation of the system, the amplification in this case being as much as 70 000 diameters.

Several series of photo-micrographs were made of spirillum choleræ asiaticæ, in which certain details shown on one plate were carried up to a very high amplification. In one case, a print from a glass positive showed the general external appearance of the fleecy envelope, a flocculent spirillum, and also an aperture in the cell wall, sufficiently large to receive or expel a spore, several of which spores were shown in the photo micrograph. Another photo-micrograph produced two straight bacilli with an apparent connecting filament of very delicate cellular structure. Bacillus anthracis, similarly enlarged, produced in one photo-micrograph, made by strong sunlight, two highly refractive spores within each bacillus; most of the spores were round, but some were slightly oval.

While photographing gonococcus, an instructive picture was produced, showing the peculiar distribution and growth of this bacterium within each pus cell, as well as free gonococci ranged in pairs and singly within and between the cells. Bacillus leprae was also similarly investigated.

These experiments of the writer are made public at this time simply to indicate that the process by which they were made possible is one that will enable the scientific investigator to carry on a systematic and thorough investigation of bacteria and other microscopic objects, and thus obtain the information which is essential to their intelligent analysis and classification.

It is a method which promises to afford a correct solution to many of the problems in pathology and kindred research, which are yet matters mainly of conjecture rather than absolute knowledge; and, as has before been intimated, it seems to point clearly to that time when the profession will no longer have to conjecture, because the straight road will be opened to positive scientific knowledge.

136 West Forty-second Street.

A NEW METHOD OF CHECKING BLEEDING AFTER TONSILLOTOMY.

By ROBERT H. M. DAWBARN, M.D.,

PROFESSOR OF OPERATIVE SURGERY AND SURGICAL ANATOMY, NEW YORK POLYCLINIC.

A year or so ago I read a paper, written by Professor Delavan, of this city, upon the subject of tonsillar hemorrhage. In this article he has collected and discusses a very considerable number of expedients for governing the bleeding in this complication.

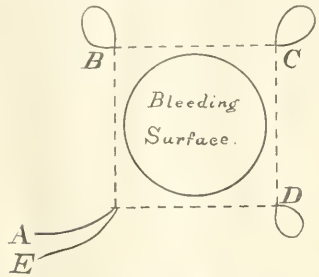
I was surprised not to find mentioned therein a method which I have taught my classes in operative surgery for several years past, and which seems unquestionably prompt, efficient, and easy of application; and is, furthermore, in my judgment, practically the best and wisest of the mechanical plans with which I am acquainted.

Although the expedient—which is presently to be explained, with a diagram—was of my own devising, yet it seems so self-evidently the thing to do that I took for granted the assumption that others must also have thought of the method and published it long ago.

Since reading Professor Delavan's paper, however, I have made some inquiries, and not finding the plan mentioned in any book at hand, Dr. Otto J. Müller, of 206 East 104th Street, this city, has recently obliged me by spending a day in the Academy of Medicine Library, looking up this question in English, German, and French literature. He states that he finds no mention of the plan which I am about to detail.

Briefly, it consists in surrounding the bleeding surface with a stout purse-string ligature, of silk or catgut, which when tightened is entirely hidden in the tissues about the tonsillar stump.

The surgeon selects a large needle, preferably semicircular in shape, and a needle-holder. The mouth is held open by a cork between the back teeth. Four stitches are now introduced, as per diagram. Less than two minutes is needed for this.



When the free ends, *A* and *E*, are drawn upon, the loops *B*, *C*, *D* of course disappear. The ligature is now tied tightly enough to stop bleeding, and the ends cut moderately short. The thread may either be left to slough out, or, and probably preferably, may be cut and removed in twenty-four to thirty-six hours.

As to the distance to which the needle penetrates, the two transverse strokes may enter to about one quarter inch in depth. The two vertical ones, running parallel with the carotids, could, if desired, probably be passed with safety rather more deeply; though there would seem to be no special advantage in this.

It is not necessary to include the pillars of the fauces in the grasp of the thread. The two vertically placed stitches run, of course, very near the pillars, but not really in their substance.

Regarding the source of hemorrhage after tonsillotomy, of one thing we can be certain, namely, that it never comes from either of the carotids. The external and internal carotids are very nearly equidistant from the tonsil, and behind it; the nearer, the internal, being rather more than half an inch away (1.5 ctm.); the external being, say, three-quarters of an inch (2 ctm.). If a tonsillotome be used, cutting either of these vessels is a mechanical impossibility.

At least six arteries supply the tonsil; all being branches, indirectly, of the external carotid. Of these the largest, as a rule, are from the ascending pharyngeal, and the ascending palatine.

Fatal bleeding from tonsillotomy is practically unknown. But bleeding to the verge of syncope, long continued, and severe enough to alarm most seriously the relatives and friends, if not the doctor—this is not so rare by any means. In such cases (in addition to nearly a dozen lesser mechanical devices) even ligation of one or another of the carotids has been advised, and actually practised; although of these vessels, tying the external carotid alone would seem rational; and that, too, only at a point between its first two branches—the superior laryngeal and the ascending pharyngeal.

However, with such a certain, safe, and easy device at hand as that which has herein been described, so severe a measure as cutting down and ligating a carotid can never be needed. Indeed, it would seem wisest to use the buried tonsillar ligature without waiting and wasting time and blood while trying less sure plans.

The nearest approach to this idea which the writer has anywhere found is a method suggested by Dr. E. W.

Clark, of New York, who has run two large needles through the bleeding base, and leaving these in place, wrapped a ligature firmly around them. Manifestly, even if this were equally as certain in effect, it would be quite as difficult to do as the writer's device, and must be much more annoying to the patient while in position. Indeed, the side of the tongue would be likely to be lacerated against the sharp needle-ends unless in some way these were covered.

The suggestion has also been made to seize with a volsellum forceps the bleeding surface, and drawing firmly upon it, tie a ligature about it. I have in one instance tried this, and found the ligature repeatedly slipping off in spite of my best efforts. Indeed, as there is nothing like a stump or pedicle left (if the tonsillotomy has been properly performed), such slipping is almost unavoidable.

I only mention this latter plan as being the other of the two which remotely resemble the method upon which this paper has been written.

105 West Seventy-fourth Street, New York.

CLINICAL OBSERVATIONS ON EUROPHEN.

By WILLIAM S. GOTTHEIL, M.D.,

Dermatologist to the Northwestern Dispensary, New York.

Many attempts have recently been made to find a substitute for iodoform which shall possess its valuable qualities without its irritant and poisonous effects. Of the various iodine derivatives that we have lately received, iodol, soziodol, dermatol, and aristol are the best known. But none of them seem to attain the object sought as well as europhen. Solubility, bactericide action, absence of poisonous absorption, absence of odor—in one or more of these properties the members of the first series are imperfect; but europhen shows all the desirable qualities.

Europhen is isobutyloxthocresoliodide, a stable iodine compound, which, under the influence of certain conditions, and especially when exposed to the action of the fluids, normal and pathological, of the organism, slowly liberates free iodine. It is an amorphous yellow powder, and contains 27.6 per cent. of iodine. It has a faint and pleasant aromatic odor, readily disguised if necessary. It is easily soluble in alcohol and ether, and mixes well with oils, fats, lanoline, talcum, and flexible collodion. It is insoluble in water and glycerine, and must not be used with preparations containing starch, on account of the iodine set free.

Europhen is anti bacterial in the same way that iodoform is, *i.e.*, it renders the medium in which it is present unsuitable for the growth of microbes. Siebel has proved that the two drugs are about equal in power. But it possesses the following advantages over the latter drug: it is almost odorless; it is non poisonous; it is one-fifth the weight of iodoform, and hence can be made to cover a much larger surface; it is more soluble; and it does not tend to cake.

Europhen has been used with great success as a dressing for wounds, in ulcerative nasal and laryngeal diseases, and in ulcerative syphilitic and chancroidal affections. During the past spring I have had some considerable experience with it in various diseases of the cutaneous system. The drug was used as an ointment with lard or vaseline, in strengths of half a drachm to a drachm and a half to the ounce; in olive oil half a drachm to a drachm to the ounce; and pure as a dusting powder.

I append a brief account of these cases.

Case I.—S. A——, female, aged ten, February 17, 1892. Diagnosis: Trichophytosis capitis. Single patch of half-dollar size, of five months' duration. ℞. Ungt. Europhen, ʒ j. to ʒ j., b. d.

March 28th.—Patch larger. ℞. Ungt. Europhen, ʒ j. to ʒ j.

April 20th.—Patch reddened; has not increased in size. Frayed hairs beginning to grow.

Patient withdrew from observation.

Case II.—H. W——, female, aged thirty-four, March 11, 1892. Diagnosis: Syphilis, tertiary; large papulo-tubercular serpiginous syphiloderm of cheek; rupia of arm; cachexia syphilitica, etc. ℞. Ungt. Europhen, ʒ ss. to ʒ j., and tonics.

March 16th.—Very much better; papules flattening; cicatrization beginning.

April 8th.—Splendid result; ulcerations have all healed under ointment; no internal treatment save mist. ferri et nuc. vom.

Discharged cured.

Case III.—A. F——, male, aged thirty-nine, March 21, 1892. Diagnosis: Papular eczema of legs. Ten days' duration; itching intense; skin torn by finger-nails. ℞. Ungt. Europhen, ʒ ss. to ʒ j.

March 23d.—Feels better. Less itching. Continue treatment.

March 28th.—Practically well; redness and irritation gone.

Discharged cured.

Case IV.—M. B——, female, aged forty-six, March 21, 1892. Diagnosis: Squamous eczema of right leg; parenchymatous dermatitis of left leg. The eczema is of long standing; the dermatitis is recent and progressing. ℞. Ungt. Europhen, ʒ ss. to ʒ j to both.

March 30th.—Both legs, but especially the eczema, improved. Continue treatment.

April 13th.—Both legs cured; excellent result.

Discharged cured.

Case V.—K. M——, female, aged forty-five, March 23, 1892. Diagnosis: Parenchymatous dermatitis of leg; ulcus cruris. Much pain. ℞. Ungt. Europhen, ʒ ss. to ʒ j.

March 25th.—Salve did patient good; ulcer contracting; less pain. Continue treatment.

April 4th.—Ulcer in statu quo; much discharge; abundant florid granulations.

Continue treatment.

April 11th.—Improving again. Continue treatment.

Patient withdrew from observation.

Case VI.—H. M——, female, aged fifty, March 11, 1892. Diagnosis: Eczema cruris, acute; Eczema seborrhoicum nasi. ℞. Ungt. Europhen, ʒ ss. to ʒ j. to both.

March 25th.—Worse; ointment "pierced" her leg. The eczema seborrhoicum has developed into an erythematous eczema of the face.

Europhen stopped, and other treatment instituted.

Case VII.—K. B——, female, aged thirty-four, March 25, 1892. Diagnosis: Eczema palmarum. Very bad. ℞. Europhen, ʒ ss.; ol. olivæ, ʒ ij.

April 10th.—Better. Continue treatment.

Patient withdrew from observation.

Case VIII.—A. M——, male, aged thirty-three, March 27, 1892. Diagnosis: Psoriasis vulgaris. Large thick patches on elbows and knees; a few guttate new ones on trunk. ℞. Europhen, ʒ j.; ol. olivæ, ʒ j.; soaked compresses to be applied to anterior surfaces of joints.

April 5th.—Scales gone; looks well. Continue treatment.

April 17th.—Patches on joints cured. Patient put on sol. Fowleri and iron for the general psoriasis.

Case IX.—J. H——, male, aged forty eight, March 4, 1892. Diagnosis: Psoriasis guttata universalis. Old case, recurs at least twice a year for the last ten years. ℞. Ungt. Europhen, five per cent., to arms only. Placebo internally.

March 25th.—Not much effect. Patient probably does not apply ointment thoroughly. Europhen stopped. ℞. Sol. Fowleri internally.

Case X.—J. C——, male, aged thirty-eight, February 29, 1892. Diagnosis: Folliculitis decalvans, limited to both knees. A chronic follicular and perifollicular pustular eruption of four months' duration. Cause unknown. ℞. Ungt. Europhen, ʒ ss. to ʒ j.

March 25th.—Ointment did some good. Most of the

papules have disappeared, the pustules have gone. Continue treatment.

April 4th —A large new crop of papulo-pustules in the last few days. Ointment pains him very much.

Treatment changed.

Case XI.—K. R——, female, aged fifty-four, March 30, 1892. Diagnosis: Rosacea, with some acne. Three months' duration. Plethoric habit; bowels costive. ℞. Mist. rhei et sod. ℞. Ungt. Europhen, ʒ ss. to ℥ j.

April 15th.—Considerable improvement. Acne papules gone. Continue treatment.

Patient withdrew from observation.

Case XII.—A. K——, male, aged forty-seven, March 11, 1892. Diagnosis: Parenchymatous dermatitis and ulcus cruris. Eight months' duration. Ulcer indolent and dry. ℞. Europhen, ʒ j.; ol. olivæ, ℥ iv.

March 14th —More pain than before. The oil hurts for an hour after each application. ℞. Europhen, ʒ ss.; ol. olivæ, ℥ iv.

March 24th.—Ulcer in same condition, sluggish and dry

Treatment changed.

Case XIII.—C. B——, male, aged thirty-seven, March 11, 1892. Diagnosis: Papular eczema of legs. Both affected from knees down. ℞. Ungt. Europhen, two per cent.

March 25th.—Better; less itching. Papules fading.

Patient withdrew from observation.

Case XIV.—M. M——, female, aged eleven, March 11, 1892. Diagnosis: Psoriasis guttata, general. ℞. Ungt. Europhen, two per cent. to arms. Placebo internally.

March 23d.—Arms much better. Papules quite pale; scaling less; marked contrast to rest of body; itching less. Continue, and use ointment to rest of body—including face and head.

March 30th.—Improvement continues. Continue treatment.

April 6th.—Arms nearly well. Eruption over whole body very much better.

April 20th.—Arms clear; rest of body nearly well; face clear; no irritation; no conjunctivitis; a few scales on knees and back. Continue treatment.

April 27th.—Eruption gone.

Discharged cured.

Case XV.—K. McB——, female, aged thirteen, March 11, 1892. Diagnosis: Psoriasis universalis. Six years' standing. ℞. Ungt. Europhen, two per cent. to entire body.

March 20, 1892.—Improvement. Less scaling. Continue treatment.

Patient withdrew from observation. Improved.

Case XVI.—B. W——, female, aged seventy-two, March 14, 1892. Diagnosis: Pruritus senilis. Very bad case; cannot sleep at all; has lost weight and strength rapidly of late.

March 25th.—Various treatment, internal and local, has been tried without rendering the patient's condition any better. ℞. Ungt. Europhen, ʒ j. to ℥ j.

April 4th.—Salve did some good; itching less; rests better. Continue treatment.

Patient withdrew from observation.

Case XVII.—M. S——, female, aged thirty, March 21, 1892. Diagnosis: Eczema seborrhoicum, cheek and nose. Marked case. ℞. Ungt. Europhen, ʒ ss. to ℥ j.

April 1st.—Face better; scaling gone; redness less.

Patient withdrew from observation.

Case XVIII.—A. D——, male, aged thirty, March 19, 1892. Diagnosis: Tubercular-ulcerative syphiloderm. Groups upon forearms and buttocks; ulceration rapidly progressive; scars of past destructive specific ulceration on various parts of skin. No history. ℞. Europhen, ʒ ss.; ol. olivæ, ℥ j., to be freely applied.

April 1st.—Ulceration stopped; papules flattening. Continue treatment.

April 10th.—Ulceration stopped; tubercles fast disappearing. Patient complains greatly of nocturnal cephalalgia and rheumatism. ℞. Mist. biniocidie, etc.

Further treatment was constitutional.

Case XIX.—A. C——, female, aged eleven, March 25, 1892. Diagnosis: Eczema seborrhoicum facei. Two months' duration. Slight scaling; little itchiness; nose, cheeks, and chin involved. Marked case. ℞. Ungt. Europhen, ʒ ss. to ℥ j.

March 30th.—Excellent result. Face well.

Discharged cured.

Case XX.—C. T——, male, aged fifty-three, March 14, 1892. Diagnosis: Parenchymatous dermatitis; ulcus cruris. ℞. Europhen, ʒ ss.; ol. olivæ, ℥ iv.

March 16th.—Slight pain from the oil. No change in disease. ℞. Europhen, ʒ j.; ol. olivæ, ℥ iv.

March 28th.—Ointment pains moderate. Sore not improved.

Treatment changed.

Case XXI.—P. K——, male, aged thirty-nine, March 21, 1892. Diagnosis: Eczema squamosum. Both legs. ℞. Ungt. Europhen, ʒ ss. to ℥ j.

March 30th.—Salve does not pain; it eases the itching a little—that is all. Redness and scaling the same.

Treatment changed.

Case XXII.—M. D——, female, aged thirty-four, March 15, 1892. Diagnosis: Eczema seborrhoicum. Chin. ℞. Ungt. Europhen, ʒ ss. to ℥ j.

March 28th.—Much improved. Continue treatment.

Patient not seen again.

Case XXIII.—J. McA——, female, aged fifty-six, March 21, 1892. Diagnosis: Parenchymatous dermatitis; ulcus cruris; eczema papulosum of arms. Skin of entire leg inflamed; ulcer unhealthy, covered with green slough. ℞. Europhen, ʒ ss.; ungt. simpl., ℥ j.

March 30th —Much better. Slough clearing off; healthy granulations appearing. Continue treatment.

April 4th.—Edges healing nicely; whole sore in better condition; can walk better. Continue treatment.

Patient disappeared.

Case XXIV.—J. L——, male, aged thirty-five, March 14, 1892. Diagnosis: Chromophytosis over chest. Marked case, three years old; spreading much in the last few months. ℞. Europhen, ʒ ss.; ungt. simple, ℥ ij.

March 18, 1892 —Eruption almost gone.

Patient withdrew from observation.

Case XXV.—E. J. L——, male, aged thirty-two, March 25, 1892. Diagnosis: Chromophytosis. Entire trunk covered. ℞. Europhen, ʒ ss.; ol. lini, ℥ j.; Freely applied.

April 10th.—Eruption much better; nearly well.

Patient disappeared

Case XXVI.—K. D——, female, aged fifteen, March 28, 1892. Diagnosis: Eczema seborrhoicum. Cheeks and nose in subacute stage. ℞. Ungt. Europhen, ʒ ss. to ℥ j.

April 10th.—Almost well. Continue treatment.

Patient did not return.

Case XXVII.—W. W——, male, aged forty-two, March 25, 1892. Diagnosis: Keratosis pilaris, thighs and arms. "Nutmeg-grater" skin. Much itching. ℞. Ungt. Europhen, ʒ ss. to ℥ j.

April 10th.—Itching less; skin smoother; papules less prominent. Continue treatment.

April 15th.—Improvement continues. Continue treatment.

Patient did not return.

Case XXVIII.—A. S——, female, aged sixteen, April 11, 1892. Diagnosis: Alopecia Areata. Three months' standing. ℞. Ungt. Europhen, ʒ j. to ℥ j., to be applied vigorously.

April 20th.—No extension of the Alopecia. Scalp not reddened. ℞. Ungt. Europhen, ʒ ss. to ℥ j.

April 28th.—Scalp moderately sore. Continue treatment.

May 8th.—Apparent good effect. Free lanugo growth on bald spots. Continue treatment.

Patient not seen again.

CASE XXIX.—J. K——, male, aged seventy, April 20, 1892. Diagnosis: Parenchymatous Dermatitis; ulcus cruris. Ulcer of eight years standing, sluggish, immensely thickened edges, dirty green base, odor bad. ℞. Poultice.

May 2d.—Sloughs cleaned off; surface of ulcer smooth and shining; no attempt at granulation. ℞. Ungt. Europhen, ʒ ss. to ℥ j.

May 6th.—Looks better. Very slight pain from salve. ℞. Ungt. Europhen, ʒ j. to ℥ j.

May 13th.—Much better. Suppurating freely; abundant granulations; margins covered with white pellicle; healing. Continue treatment.

May 18th.—Same condition. ℞. Ungt. Europhen, ʒ jss. to ℥ j.

June 3d.—Doing splendidly. Ulcer much contracted. Last note, made June 10th, showed steady improvement.

CASE XXX.—M. M——, female, aged eighteen, May 2, 1892. Diagnosis: Psoriasis Guttata. ℞. Ungt. Europhen, ʒ ss. to ℥ j.

May 23d.—Scaling much less; better. Continue treatment.

Patient did not return.

CASE XXXI.—J. M——, female, aged forty, April 20, 1892. Diagnosis: Parenchymatous Dermatitis; ulcus cruris. Old case. ℞. Ungt. Europhen, ʒ j. to ℥ j.

April 25th.—Looks healthier. Continue treatment.

May 2d.—No marked change. Patient is careless, and does not dress ulcer properly.

May 13th.—Same. ℞. Ungt. Europhen, ʒ j. to ℥ j.

May 18th.—Patient complains much of pain from the salve. Ulcer covered with a green slough. Has not used the ointment, evidently.

Other treatment instituted.

CASE XXXII.—F. W——, female, aged thirty-three, colored, April 18, 1892. Diagnosis: Large ulcerative tertiary syphiloderm. Leg. ℞. Ungt. Europhen, ʒ ss. to ℥ j.

May 13th.—Patient has used salve only. Ulcer is almost well. Continue treatment.

Patient was not seen again.

CASE XXXIII.—P. S——, male, aged twenty-nine, May 2, 1892. Diagnosis: Parenchymatous dermatitis; ulcus cruris. Some months' standing. ℞. Ungt. Europhen, ʒ ss. to ℥ j.

May 6th.—No change. ℞. Ungt. Europhen, ʒ j. to ℥ j.

May 16th.—No better; salve hurts moderately. No result. Treatment changed.

CASE XXXIV.—E. M. G——, female, aged forty, May 20, 1892. Diagnosis: Tertiary tubercular ulcerating syphiloderm. One month. ℞. Ungt. Europhen, ʒ ss. to ℥ j.

June 10th.—Doing very well; healing fast.

Patient did not return.

CASE XXXV.—M. C——, female, aged forty-six, May 27, 1892. Diagnosis: Acne indurata. ℞. Ungt. Europhen, ʒ ss. to ℥ j.

June 6th.—No improvement at all.

Treatment changed.

CASE XXXVI.—T. T——, male, aged eight, June 1, 1892. Diagnosis: Trichophytosis corporis. ℞. Ungt. Europhen, ʒ ss. to ℥ j.

June 3d.—Better; less redness; no extension. ℞. Ungt. Europhen, ʒ j. to ℥ j.

June 6th.—Well.

Discharged cured.

CASE XXXVII.—P. K——, male, aged nine, June 8, 1892. Diagnosis: Trichophytosis corporis. ℞. Ungt. Europhen, ʒ ss. to ℥ j.

June 10th.—Same.

June 15th.—Seems to be spreading. ℞. Ungt. Europhen, ʒ j to ℥ j.

June 19th.—Improvement. Continue treatment.

Patient did not return.

Summary.—The best results were obtained with the drug in tertiary syphilitic ulcerations. Out of four cases, three were rapidly cured, and one was much improved when lost sight of. Excellent results also were seen in chromophytosis (pityriasis versicolor), and trichophytosis corporis (tinea circinata) the two cases of each disease getting well quickly.

Ringworm of the head, on the other hand, as well as acne and folliculitis, were not affected. Pruritus senilis, alopecia areata, and keratosis pilaris showed benefit from the use of the drug, but not more than is usually obtainable by other means.

Of eczemas (seven cases) the more chronic varieties were improved and two cured; the acute varieties were not benefited; and on seborrhœal eczemas the effect was undecided. The drug deserves further trial in chronic cases of this malady.

In parenchymatous dermatitis with ulceration (seven cases), chronic cases, with sluggish ulcers and dead tissue were much benefited, though I have not recorded a single case as cured. The well known obstinacy of the malady, and the practical difficulties in the way of its ambulant treatment, fully account for this.

In all the five cases of psoriasis but one the improvement was marked. The result was fully as good as that obtained by the use of chrysarobin for the same length of time; over which drug europhen possesses great advantages in point of non-irritating and non-poisonous qualities.

25 WEST FIFTY-THIRD STREET.

Clinical Department.

RECORD OF NINE CASES OF GONORRHŒA SUCCESSFULLY TREATED WITH HYDROGEN PEROXIDE, UNDILUTED.

BY L. L. VON WEDEKIND, M.D.,

U. S. NAVY.

WITH a record of nine cases of gonorrhœa, treated in the earlier stages by injection of hydrogen peroxide, with uniformly good results, I feel that this method of treatment should become known, as it has, so far, benefited the patient, not only medicinally, but financially and socially.

Some months ago I was visited by a young man who came in a state of great mental excitement, and actually demanded that I cure him at once of an attack of gonorrhœa. His reason for being so abrupt and positive was, that he was in a few days to be married, the cards and consequent paraphernalia attending such an occasion had all been gone through with, and, as he said, "I must be married, and you must cure me."

The history of the case was as follows: At a farewell dinner given to bachelor friends six days before coming to see me, he partook not sparingly of wines, and after dinner and before going home, he met a lady acquaintance, and being still a bachelor, did as bachelors do. When I saw him, he complained of a burning sensation along the urethra during and after micturition, and had that morning noticed that the lips of the meatus were glued together, and concluded that the uneasy sensation about the parts foretold an approaching attack of gonorrhœa. Of this fact he was certain, as he had before suffered from the same disease, and knew well the symptoms. I have no doubt whatever that his diagnosis was correct.

After having obtained a full history of his case, I forced out whatever was in his urethra, and had it examined under the microscope by a competent observer, who, however, reported nothing specific, but requested some slides a few days later. These I promised him. Before hearing the results of the examination by my friend, however, I had to do something for my patient. He very

bravely declared that, rather than run any risk, he would find some pretext or other to postpone the ceremony. I told him to wait for twenty-four hours before deciding on anything, and at the end of that time I would give him my opinion as to whether or no I could help him. He was placed on rather large doses of acetate of potassium, and I told him to use as an injection, beginning at once, the undiluted solution of hydrogen peroxide, four or five times; to inject very thoroughly and to close the meatus after the syringe was withdrawn, the solution to be kept in place for at least five minutes after each injection, and to inject standing up, not restricting the bladder end of the urethra. He carried out my directions so thoroughly as to use twelve injections in the twenty-four hours, and twice as much of the internal remedy as I had ordered, but with very excellent results.

I saw him next day, and found that he had gotten rid of all his annoying symptoms, and I then suggested that if he could not find a very plausible excuse, why, to go ahead and get married, but in the meantime to continue treatment in a modified form. This he did, and was married a little less than a week after. I was much worried at the time, fearing a return of the disease, but nothing happened.

The seven cases following this were all treated in the same way, and in each the disease was aborted. None of these cases had developed the active inflammation to such an extent as to have much if any discharge, but all evinced symptoms indicating a commencing attack, and these symptoms are so well known to the initiated patient, that the correctness of their diagnosis of the case is almost beyond doubt.

The ninth case I treated at the Naval Hospital in Chelsea, Mass., but a few days ago. The patient's history is similar to the first case as regards the length of the period of incubation, six days. This is the first attack, and the patient stated that he did not know what was the matter. He was put on potassium acetate, twenty grains four times daily, and used hydrogen peroxide undiluted, ten-volume strength, five times in twenty-four hours, continuing the treatment for three days; he was also confined to his bed and placed on restricted diet. I personally supervised the use of the syringe in this case, and noticed that the escape of the solution, after being retained for five minutes, was as if it were shot out, gas and a frothy foam being mixed with it. But little pain was at first noticed, though it increased somewhat after the third injection. After the first day's treatment, however, the patient suffered but little discomfort when using the syringe.

I have used this solution in different stages of the disease, but have not found it to be much superior to the many others used, except in so much that it is less painful than many others (I have used it in one-half or one-quarter strength in the acute or later stages), and also that it is a most excellent cleansing agent. Cases that have been discharging more than two days I have been unable to abort.

The use of this drug in the early or incipient stage of gonorrhœa, I believe will cause the disease to remain a local trouble, prevent the absorption of the septic material—in other words, prevent gonorrhœal septicæmia by the removal of the hotbed of infection, as it is supposed to do in diphtheria.

Very probably, some will suggest the possibility, perhaps the probability, that none of these cases would have developed into a specific urethritis, if allowed to go on. Possibly they may be right. Nevertheless, by experience I have found that when the disease is once fairly started—in fact, when the discharge is more than two days old—the hydrogen peroxide will not abort the trouble, and also that it will allay all the prodromal signs and symptoms if used upon first noticing any manifestation of these.

To the "doubting ones" I would suggest that they call to mind that little story of "the barn door and the horse." To await an indisputable diagnosis by the microscope to the exclusion of the history, symptoms, and signs, is to allow the disease to run its course, for I do not believe that any germicide preparation will penetrate deeply enough to catch the gonococcus after it has passed into the deeper layers of the epithelium.

A SEVERE CASE OF SUPPURATIVE ADENITIS.

By FRANK A. BOTTOME, M.D.,

NEW YORK.

I was called in to see Margaret ——, aged sixty-two, servant, on August 1st, and found she had been suffering for three days with a sore throat, but had said nothing about it for fear of troubling her mistress.

Examination showed the left tonsil swollen and points of pus at the mouths of the follicles. These patches could be wiped off with bits of cotton without causing bleeding from the membrane beneath. The soft palate was swollen and uvula œdematous; the right tonsil was intact. Temperature, 102° F.

My diagnosis was follicular tonsillitis, and I ordered sod. bicarb. applied locally, and iron internally.

On the following day her condition was about the same, but on August 3d the right tonsil became involved. The swelling of both tonsils was now considerable, and the uvula was swollen and œdematic, so that it was very difficult for her to take either fluid food or medicine, the larger part being regurgitated through the nose.

On the following day the submaxillary glands were found enlarged and very tender on pressure. The difficulty of deglutition was even more marked, but the patient's pulse and general strength were remarkably good.

August 5th.—Her condition was even worse, owing to the involvement of the sublingual gland, which was so swollen as to push the tongue up against the roof of the mouth. At this time I found, situated on the floor of the mouth on the right side and extending along the inner gum to the middle line, a dark-grayish membrane and the attempt to lift this up caused the membrane beneath to bleed. I also found the post-cervical glands enlarged.

In the evening of August 5th, Dr. S. F. Morris was called in consultation, and after a careful examination we came to the conclusion that it was probably diphtheria, though the age of the patient was against such a diagnosis, as was the fact that there had been no previous case of diphtheria in the place. It was impossible at this time to see anything behind the tonsils and uvula, owing to the swelling and œdema.

To assist in clearing the doubt in diagnosis, I removed a portion of the membrane and sent it to Dr. F. Ferguson, of the New York Hospital, and in the meantime removed the patient, who was staying in a large summer boarding-house, to an isolated cottage near the ocean, where, under the care of a trained nurse, she could have better attention.

August 7th.—A large amount of pus was evacuated from the sublingual gland.

The following day the right tonsil broke and evacuated a quantity of pus. The left tonsil subsided by resolution, and the condition of the patient was very much improved, fluid food being readily taken. The submaxillary glands, especially the right, remained swollen, and notwithstanding they were poulticed continually, did not soften, nor could I detect the presence of pus on palpation.

August 10th.—The right tonsil, which after breaking had gone down nearly to normal size again, discharged a large quantity of pus, and at the same time a diminution took place in the size of the right submaxillary gland. From this time on convalescence was uninterrupted, and on August 16th the patient was able to go to her home, near New York City.

In the meantime Dr. Ferguson had made an examination of the specimen which I had sent him, and reported

that "sections through it failed to reveal any of the elements ordinarily found in diphtheritic membranes," but that it was "a necrotic mass without any structural arrangement;" also, "that bacteriological examination proved negative."

The case is interesting first, from the question of diagnosis. The membrane certainly resembled a diphtheritic membrane in its gross appearance, and the bleeding on attempting to remove it from the underlying tissues was characteristic, as was also the general involvement of the glandular structures in the vicinity. On the other hand, against such a diagnosis was the fact that there had been no case of diphtheria in the neighborhood for months previous, nor did any occur subsequently during my stay in the place, which was two months.

Secondly, if then it was a case of suppurative tonsillitis, or better, adenitis, involving as it did more than the tonsils, it is interesting from the fact that such an extensive suppurative process should occur without any apparent cause, such as diphtheria or scarlet fever, and also from the fact that the patient made a good recovery.

134 West 126th Street.

DIGITALIS IN PNEUMONIA.

Dr R. I. Bond, of Hartshorne, I. T., writes that he has never failed to obtain the desired result from the use of digitalis in pneumonia, if given after the following method:

"Begin with a medium dose, the fluid extract being my preference, and gradually increase until the pulse is reduced to a little below normal, then decrease until the normal pulsation returns and hold it at that until all expectoration subsides; then gradually decrease until the dose is so small that you can safely stop its administration, convalescence by this time being quite advanced. It will probably be asked what are its effects outside of those upon the heart. 1st, It is the only permanent antipyretic; 2d, the only reliable sedative; 3d, the only effectual means of rapidly controlling the flow of blood to the inflamed lung, hence it soon checks expectoration by rendering it unnecessary; and 4th, it has the diuretic effect which is needed in most cases of pneumonia. The dose is to be measured by the amount of obstruction in the circulation through the lung. I have found it necessary to increase the dose to fifteen drops of the fluid extract every four hours to control the heart's beat in adults where there was extensive obstruction in the lung. I have given to a child four years old four drops every three hours with nothing but the desired effect. This was in a case of capillary bronchitis, in which trouble it is quite as efficient as in pneumonia. A favorite combination is this:

℞. Aromatic spirits of ammonia..... ʒ ss.
Fluid extract of digitalis..... ʒ iiss.
Glycerine .... q. s. ad ʒ iv.

M S.: Teaspoonful every three or four hours, to be increased as the case may require.

VALUE OF THOROUGH VAGINAL TAMPONING IN PLACENTA PRÆVIA.

By JOSEPH S. HEALY, M.D.,
Assistant Laryngologist to Demilt Dispensary, New York City.

Placenta prævia, particularly in cases where it is of the complete variety, being one of the most formidable and dangerous abnormalities which can be encountered in obstetrical practice, anything written from personal experience, especially where the line of treatment adopted terminated in saving the patient, must be of value to the obstetrician. With this fact in view I shall, without further apology or preface, endeavor to give an accurate account of a case of complete placenta prævia which fell to my lot.

The patient was Mrs. D——, whose previous history is as follows: Her first pregnancy was attended with no unusual symptoms, labor was normal and terminated in the birth of a daughter, who is now living, aged seven years and seven months, and in good health.

About five years ago she became pregnant for the second time. In the fourth month of her second pregnancy she claims the membranes ruptured, causing a great discharge of water, and from that time on there was a constant leakage of water until the sixth month, at which period she aborted, giving birth to a living fœtus which lived six hours. Her family physician at that time had considerable difficulty in removing the placenta. The cause of the abortion I have been unable to learn.

In February of the present year she became pregnant for the third time. In the second month of her late pregnancy, at about what would have been her period of menstruation, she had a slight discharge of blood from the vagina. In the third month a similar discharge occurred. When this second hemorrhage began she consulted me, in order to ascertain whether she was pregnant or not. After making as thorough an examination as the existing circumstances would permit, I informed her that she was pregnant, and administered a uterine sedative which stopped the flow, and the pregnancy progressed with no further untoward symptoms until about the commencement of the seventh month, when the third hemorrhage occurred

Arriving at her bedside I found a slight hemorrhage existing, but unaccompanied by pain of any character. Examination disclosed no dilatation of the external os. There being no apparent cause for the flow, I at once suspected it to be a case of placenta prævia. I administered a uterine sedative, and as a precautionary measure tamponed the vagina and cautioned her to remain in bed under all circumstances. The next morning upon removing the tampons I found the hemorrhage had ceased, and but one of the three tampons inserted was blood-stained. After keeping her in bed for four days, during which time no further symptoms developed, I allowed her to get up, but cautioned her to do no housework.

In the eighth month, about the menstrual epoch, the hemorrhage again appeared, unaccompanied by pains, and examination revealed no dilatation of the os. Satisfied with the serious nature of the trouble which I had to contend with, I explained it to both the patient and her husband, at the same time informing them that the proper treatment would be to terminate her pregnancy; but at their urgent request I postponed active measures, and again administered a uterine sedative and ordered the patient to remain in bed, and in a few hours the hemorrhage ceased.

On October 20th a very profuse hemorrhage occurred; this time, however, accompanied with true labor pains. An examination showed the external os was beginning to dilate, but I was unable to pass the internal os. The patient being somewhat anæmic from loss of blood, I decided to tampon the vagina and cause the blood to dissect the placenta from the uterine walls. It required eighteen cotton tampons, each tampon as large as could be passed through an ordinary bivalve speculum, to completely fill the vagina and control the hemorrhage. After waiting about four hours, all labor pains having ceased, I removed the tampons and found the os fully dilated with a portion of the placenta presenting. Careful examination revealed a case of complete placenta prævia.

Sweeping my finger around inside the os as far as I could reach, I found, as anticipated, the placenta had been dissected from the uterine walls, but to what extent it was impossible to ascertain. I was about to push through the placenta and pull the feet down when I decided it would be safer to have assistance and administer chloroform. I sent for Dr. Thomas Darlington, and after consultation administered the chloroform, while he endeavored to push through the placenta. I say endeavored, because when he attempted to do so the placenta simply dropped off from its attachment to the uterus, demonstrating the fact that the tamponing had caused the blood

to dissect up the entire placenta, leaving it attached only by a rim so narrow that it gave way upon slight pressure.

Seizing the feet, which were near the os, he pulled them through into the vagina. At this stage his hands became so slippery that he was unable to draw the body down. My hands being dry, I seized the feet and drew the body down and out of the vagina; the uterus contracting strongly instantly expelled the placenta with absolutely no hemorrhage.

Notwithstanding all antiseptic precautionary measures, on the third day symptoms of septicæmia set in. On the fifth day the temperature was 103° F., with extreme tenderness of the uterus, accompanied by an extremely fetid discharge, which I successfully treated by curetting the uterus and using intra-uterine antiseptic douches freely.

The two cardinal points which I wish to draw attention to are: First. The treatment *par excellence* in placenta prævia, or suspected cases of the same, is thorough vaginal tamponing. Had I attempted rapid dilatation by the use of Barnes's bags or instrumental dilators the resulting hemorrhage would have been disastrous. Second. No physician should attempt to deliver in a case of placenta prævia without assistance. Should the placenta be adherent and the physician not succeed, owing to slippery hands or otherwise, in drawing the body of the child through the os, before he could dry his hands and again grasp the legs, the hemorrhage would, in all probability, cost the patient her life.

In conclusion, I will briefly mention that my last nine consecutive obstetrical cases were as follows: Five abortions ranging from four to seven months; one shoulder presentation; one hand and foot presentation; one case of puerperal eclampsia, and one complete placenta prævia.

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A STUDY OF THE RELATIONSHIP BETWEEN THE SPHINCTER OF O'BEIRNE AND THE VALVE OF BAUHIN IN THE FUNCTIONING OF THE LARGE INTESTINES.

By HENRY V. GRAY, M.D.,

Roanoke, Va.

The arguments and demonstrations so ably brought forward many years ago by O'Beirne, upon the constriction situated at the line of junction between the sigmoid flexure and rectum in defecation, have been neglected by our profession. His argument was to the effect that the rectum is contracted and contains neither gas nor fæces in ordinary conditions. That expulsion of fecal matters followed only after the rectum was distended, and that peculiar sensation for evacuant relief was established. O'Beirne demonstrated that at this intestinal junction before spoken of, the fecal matters are arrested and remain there for a definite period, when the constriction relaxes and the matters pass into the rectum. This being established as a physiological fact, he went further, to prove that the muscular fibres were truly sphinctal in their action. This led our anatomists to name this sphincter after its distinguished observer—sphincter of O'Beirne.

Promising this as a study, I shall feel myself especially honored to take up the scalpel handed me by the eminent observer, to find new fields of deduction.

I shall claim, in the beginning of this study, that the sphincter of O'Beirne has a powerful influence over the large intestines, and, indirectly, the small intestines are impressed. At the junction of small with large intestines, there is a valve, familiar to all of us, the ilio-cæcal or valve of Bauhin. This special anatomical region has lately been much talked over and experimented upon, on account of the little worm like process called vermiform appendix. It is subject to inflammation, from foreign substances getting into it, 1, because the ilio-cæcal valve has not performed properly its duty; 2, because the repository to its falsity attempts to conceal its ill gotten gains by confederating with its more unfortunate neighbor, the vermiform appendix—vulgarly spoken of as the "monkey tail." We know the repository of the ilio-cæcal valve is the cæcum, and that a valve likewise guards closely the entrance to the appendix. The cæcum is located immediately behind the anterior abdominal wall in the right iliac fossa, being retained in its position by a fold of the peritoneum. Both the large and small intestines have longitudinal muscular fibres to give strength and force to propulsion of contents. The former (large) division has its longitudinal fibres arranged in bundles, or "three flat longitudinal bands." We are told their anatomical arrangement is into anterior, posterior, and lateral. "These bands are nearly one half shorter than the other parts of the intestine, and serve to produce the sacculi which are characteristic of the cæcum and colon; accordingly, when they are dissected off the tube can be lengthened, and its sacculated character becomes lost." I will likewise add that this arrangement of the longitudinal bands gives to the colon a spiral action, which greatly promotes and multiplies its power for motion. The circular fibres are scattered around the colon in thin layers, having special thickness and power at distinct intervals. We are now anxious to find out what influence can the sphincter of O'Beirne have in the functioning of small and large intestines at this point.

The sphincter of O'Beirne is a retaining one, and is intended to act rhythmically with the associate parts. Ordinarily the fluid contents of the small intestines are emptied into the large intestines by the way of the valve of Bauhin, at some regular interval. The fecal matter is now in readiness to pass along the colonic conduit to its place of arrest at the sphincter of O'Beirne. Its advance is much slower in the colon than in the small intestines. Having observed closely the muscular distribution, the longitudinal fibres shorten to draw up the yet fluid matters, each sacculus of the ascending colon acting as so many basins; while the lower circular fibres contract, the upper relax, thus furnishing a threefold force to propulsion. Of course, as the fecal matters pass on to the other divisions of the colon, the watery portion is taken up, and the residue becomes more solid, until it reaches the sigmoid flexure. We have argued a purely normal conduit. We will now suppose that we have to deal with some morbid state.

The upper portion of the rectum, in front, is in relation with the posterior surface of the bladder in the male, and the posterior surface of the uterus and its appendages in the female. The middle and lower portions of the rectum are in relation, in front with the male bladder, vesiculæ seminales, and vasa deferentia, and with the prostate gland and membranous portion and bulb of urethra. In the female it is adherent to the posterior wall of the vagina, and the intervening space between it and the vagina. The latter space is the perineum. The reader will take notice that I am treading on strictly anatomical parts, and can, therefore, claim their strict attention and confidence. Once more. The pelvic portion of the sympathetic system of nerves converges and unites in front of the coccyx by means of a small ganglion—the ganglion impar. What more would you have me to produce to prove that a morbid state frequently attends this region, particularly the sphincter of O'Beirne, and its fatal and damaging influence; in fact, over the entire abdominal and pelvic circle? When this sphincter of O'Beirne becomes stiffened or relaxed, the same longitudinal fibres, from cæcum to rectum, become involved in the torpor; likewise the valve of Bauhin, until the healthy tone is lost. The liquid contents rush on rapidly to the relaxed sphincter, and meeting with no resistance, pass out before they have solidified. The fecal matter becomes, in fact, an irritant—no longer fit for use in the economy. This sphincter can likewise become relaxed, stupid, or otherwise deranged from many causes, none more so than intemperance in its widest sense, and epidemic causes. Again, it takes on spasmodic action from the same and other causes, until the most obstinate constipation and impac-

tion at some point may follow. Any irritation of the genito-urinary centre will most assuredly affect this sphincter. As I have spoken of the ganglion impar in this study, I will at present point to its healthful or baneful influence over this entire region; but it more especially presides over the internal sphincters of anus, uterine cervix, and bladder. It is a study within itself—I will therefore leave it for some future occasion. But little medical literature is at my disposal, if published, upon this important ganglion—the ganglion impar.

To fortify still further my position, I will ask you to take up the colon and its kindred parts, and liken it to a mechanical power and observe with a mechanical eye. Think of the colon as a piece of rubber hose, hang it that it may assume some shape, with valve and sphincter in their true relative positions, and operate the parts like the natural parts, and you will find it almost in the shape of a horse-shoe syphon, the sphincter of O'Beirne being lower than the inlet. This may be regarded as a bunglesome illustration, nevertheless it may help others to do better.

In conclusion I will consider one more point, and thus make practical my feeble effort.

A large majority of our physicians, in directing their patients to massage the abdominal walls just before going to stool, instruct them to "work over and around" the navel and right iliac region or cæcum, and to pass up and around the line of the colon to the left groin, and there stop. No instructions are given to massage this point. If O'Beirne's arguments and my deductions are correct, I take much pleasure in telling you to massage especially the sphincter of O'Beirne, and the sigmoid area. You will frequently be gratified to feel and hear the moving of the gases and fecal matter. You cannot force the colonic contents from cæcum to sigmoid flexure at once; it takes its own time, but you can persuade the sphincter of O'Beirne to relax and allow contents to pass into the rectal pouch, ready for commonsense defecation. Let me beg the profession not to deal harshly with this sphincter by meddlesome colonic irrigation. You can go a long way by persuasion and massage, provided the defect resides within the area of the sphincter of O'Beirne. The important relationship of this sphincter, together with the recto sigmoidal area, must have great significance in diseased states, if we will only mentally review each part, both in male and female patients, when they seek our aid in obtaining relief.

A CASE OF BILATERAL PARALYSIS OF THE ABDUCTORS OF THE VOCAL CORDS.

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BILATERAL paralysis of the abductors (crico-arytenoidei postici) of the vocal cords, is the most unusual of all the varieties of innervation which affect the larynx. When we consider the large number of specialists who are engaged in throat practice, in this country and in Europe, the number of cases placed on record appears surprisingly small; consequently, every case is invested with more or less interest to the profession, especially as the etiology of the condition cannot, in the majority of cases, be determined during the life of the patient.

We know that pressure upon both recurrents, by enlarged bronchial glands, a mediastinal tumor, an aneurism of the arch of the aorta, or the innominata involving the right subclavian, extra-tracheal pressure from an enlarged thyroid gland, are causes which may generally, but not invariably, be recognized during the life of the patient. If none of the causes above enumerated is present, then we are forced to conclude that the cause is central, even where there is no other evidence of cerebral disease.

This view, which is held by most writers on the subject, has been confirmed by the recent experiments of Felix Semon, in connection with Victor Horsley (*British Medical Journal*, December 21, 1889), who found a "proclivity of the abductors to fail in organic disease."

In order to prevent death from glottic spasm, tracheotomy should be performed without delay. If the patient objects to the operation, the great risk incurred of death by asphyxia should be fully explained to him; as a rule, consent will be given, after he has been made to appreciate the serious nature of his condition. If there is a history of syphilis, the proper treatment may be carried out after the introduction of the cannula. Electricity is of no avail in these cases, and if applied to the cords before tracheotomy has been performed, may bring about fatal spasm of the glottis.

The following well marked case is of interest, from the fact that the cause of the paralysis has not as yet been ascertained, and as showing the great improvement in the general condition of the patient after the operation of tracheotomy.

P——, aged forty-five, Irish, occupation, plasterer, was admitted into the Metropolitan Throat Hospital, October 3, 1892. He stated that about a year ago, after exposure, he caught a severe cold, which left him with impaired power to breathe freely; previously, he had never experienced any difficulty in breathing. About six months before entering the hospital he became worse, lost rapidly in flesh and strength, and was unable to work with regularity at his trade.

At the time of his admission into the hospital there was constant dyspnœa, especially well marked during inspiration, and upon making the slightest physical exertion, for instance on ascending stairs, it was greatly increased and became stridulous. Attacks of spasm of the glottis occurred nightly, and were becoming more frequent and more severe in character.

A laryngoscopic examination showed that the cords were fixed in the position of adduction, and upon inspiration the space between them did not exceed one-tenth of an inch; his voice, of course, was unimpaired; the cords appeared healthy and were not atrophied. A careful examination of the chest failed to discover evidence of aneurismal or other pressure upon the recurrents. About sixteen years ago, he had a gonorrhœal discharge and he thinks a chancre, but since then he has had no symptoms of syphilis. No result has followed antisyphilitic treatment, which has been thoroughly tried.

Tracheotomy was performed. Since the operation he has gained greatly in strength and about fifteen pounds in weight, he sleeps well, and has an excellent appetite. The position of the cords is unchanged.

65 WEST THIRTY-EIGHTH STREET.

THE TREATMENT OF DIPHTHERIA BY PYOKTANIN.

By LOUIS FISCHER, M.D.,

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PYOKTANIN, or methyl-violet, as it is sometimes called, has been advocated for some time in the treatment of diphtheria. Recent contributions to medical literature have been made by Dr. Jaenicke, in *Therapeutische Monatshefte*, 7 Hefte, and since then by Dr. Taube, of Leipsic. It has been recommended not only in the treatment of diphtheria, but also in the treatment of scarlet fever, diphtheria, tonsillitis, and soor.

An elaborate article appeared in the *Deutsch. Med. Wochenschrift*, No. 38, by Dr. Taube, since which time I have used it in fifteen cases of diphtheria which I have not only clinically but bacteriologically proven to be true diphtheria. The method of applying it has been in the form of an aqueous ten per cent. solution directly to the affected parts by means of a glass rod (applicator), around which a pledget of cotton soaked in the solution was used. After each application the cotton was burned in order to avoid further infection. Five minutes before each application the child received a teaspoonful of bi-

carbonate of soda dissolved in a tablespoonful of water. The applications were made twice a day for three days, and no other treatment given. Some cases required its continuation five and six days, and one case still needs treatment—eleven days. Good wine, stimulation, and farinaceous diet were also used. The condition of the urine and the bacteriological results and post-mortem effects will be dealt with later. This is merely intended to be a preliminary announcement.

40 Rivington Street.]

Progress of Medical Science.

Pneumathæmia.—In an editorial article published in the *Medical News* we are informed that this name was coined by Cless to denote a condition in which air is present in the blood-vessels. In the medical literature of the past seventy years many cases are recorded in which the blood-vessels after death contained air or gas, which did not seem attributable to post-mortem decomposition. In some cases, especially in the course of surgical operations about the neck, death has been supposed to result from the entrance of air into the veins. Such cases have been the subject of much dispute. Experimental work has been done that proves that very large quantities of air must enter the vessels for death to ensue; thus Nysten found the lethal amount introduced into the jugular veins of dogs to vary between 40 and 120 c.c. Hare also proved that quantities of less than 40 c.c. did not kill dogs, and expressed his belief that an amount of air sufficient to cause death in a human being could not possibly enter a vein injured by a surgeon during an operation. Laborde and Muron have further shown that enormous quantities, 2,000 or 3,000 c.c., if introduced slowly and at intervals into the circulation of dogs, do not cause death. While not denying that death really may at times result from the sudden entrance of air into injured veins, Welch and Nuttall ("A Gas-producing Bacillus—*Bacillus aerogenes capsulatus, nov. spec.* Capable of Rapid Development in the Blood-vessels after Death," *Johns Hopkins Hospital Bulletin*), have reported some important investigations that will serve to clear up many, if not all, of these mysterious cases. In the case of a man who died rather suddenly after repeated copious hemorrhages from a large sacculated aneurism of the aorta, which had ruptured through the anterior thoracic walls in two places, the heart and blood-vessels, eight hours after death, were everywhere found to contain gas-bubbles in large amounts. The gas was inflammable, and was, therefore, certainly not atmospheric air. Smear cover-glass preparations of the blood showed myriads of capsulated bacilli wherever this gas was found. The micro-organism was isolated in pure culture and found to be an obligatory anaërobe. The bacillus, which varies in size, averaging from 3 to 7 μ in length, is non-motile, does not form spores, is, as a rule, surrounded by a distinct capsule, grows on all ordinary culture-media under anaërobic conditions, and stains well with the usual aniline dyes. Pure cultures in sugar-bouillon, injected into the circulation of rabbits just before death, reproduced in every particular the conditions found in the body of the patient, so far as the presence of gas and the changes caused by the bacillus are concerned. Welch and Nuttall express the belief that the bacilli entered the aneurismal sac through the external openings in the chest-wall before death, and, though speaking with reserve on this point, they think that the gas produced may have had something to do with the death of the patient. We do not know whether cultures have before been made in such cases, but even if they had been made by the ordinary roll and plate methods, it would not be surprising that no results were obtained, since, as has now been discovered, the bacillus is anaërobic. This instance shows the advisability of adding, as a matter of routine, to our ordinary culture-methods at autopsies, a few tubes to be grown in the absence of oxygen, a matter of little difficulty since the introduction of Büchner's jars.

Vulvo-vaginitis in Children.—From a painstaking study of this subject published in the *Journal of Cutaneous and Genito-urinary Diseases*, November, 1892, Dr. E. Martin, concludes that: 1. Vulvo-vaginitis in children may be gonorrhœal or irritative. 2. Both forms are prone to occur among dirty, ill-nourished children. Scrofula and the exanthemata particularly predispose to the development of either form. 3. The gonorrhœal form is rarely acquired from criminal practices; it is usually carried from an infected mother to her child, either during birth or afterward, by means of the fingers, garments, wash-rags, or bathing water. It is characterized by inflammatory involvement of the urethra, vagina, and endometrium; is attended with fever, local pain, and often severe bellyache, and has a tendency to become chronic. 4. Gonorrhœal vulvo-vaginitis may occur at any age. It is probably more common in the first two years after birth. It may be complicated by gonorrhœal ophthalmia; by gonorrhœal rheumatism; by any of the complications and sequelæ of gonorrhœa in the adult. Its discharges are highly contagious, not only by actual contact, but through the medium of bath, bedclothes, and garments. Hence a prompt diagnosis is of extreme importance, and in institutions cases must be separated from other non-infected inmates. 5. A positive diagnosis can be made only after microscopic examination of the urethral discharges. Since the disease may be acquired in many ways impossible to trace, and since competent observers state that there are other micro-organisms in the vulvar discharges of vulvitis identical in appearance and staining reaction with gonococci, great weight cannot be attached to the finding of these bacteria in medico-legal cases. 6. The treatment consists in frequent injection of the vagina by means of an irrigator and a small soft rubber catheter, with hot soda solution, followed by hot bichloride solution 1 to 10,000, or silver solution 1 to 6,000; dusting of the vulva with finely powdered zinc oxide powder, and dressing with dry cotton inserted between the labia. Cure usually results in three to five weeks. Sometimes, when parents are careless of treatments, the inflammation becomes chronic and runs on indefinitely. 7. The catarrhal or irritative form of vulvo-vaginitis is most frequent from the fourth to the sixth year of life. It may be excited by attempts at rape or other traumatism. Its commonest cause is seat-worms and dirt. 8. It is not yet proven that this form is contagious, or is followed by any of the complications of the gonorrhœal form. It rarely invades the urethra, often spares the vagina, and occasions but slight local symptoms and no systemic disturbance. Exceptionally it may be the precursor of local diphtheria or gangrene (noma pudendi). 9. Except in the scrofulous, cachectic, and persistently dirty, it quickly yields to mild cleansing and astringent washes, and general tonic treatment.

Rhus Radicans in Enuresis of Childhood.—Dr. St. Philippe claims that in rhus radicans we have a remedy in nocturnal enuresis of childhood more certain and effectual than any hitherto recommended. He uses it in the form of a tincture—dried leaves, 1 part; alcohol of sixty-nine per cent., 5 parts—of which he prescribes, at first, five drops morning and evening to children of from two to six years. In rebellious cases, and in children over six years, he gives as high as twenty drops morning and evening. It is given in a little syrup and water.—*National Druggist.*

Too Much Needle.—A man recently brought suit against the proprietor of a London restaurant to recover damages for injury received in swallowing a needle with the spinach. He lost his case because he had no witnesses to prove that the needle was in the food.

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE ESTABLISHMENT OF A NATIONAL QUARANTINE.

THE experiences during the past months in connection with the threatened invasion of this country with cholera, and the grave probability that the disease will visit our shores with the coming of summer, have drawn attention to the necessities of the establishment of a more efficient quarantine system.

To such as have studied the question impartially, from the standpoint of general good rather than that of political expediency, there is but one verdict, and that is in favor of a national quarantine. By the praiseworthy efforts of the health officer of this port the disease was prevented from gaining a foothold in New York during the past season, and while it must be admitted, even by those who on general principles are opposed to the present system, that he did his duty and deserves all praise, the precedent is hardly a guarantee against future possible failures under existing regulations. It is not required of New York to take upon itself the principal burdens of responsibility and expense for protecting the rest of the country. It is notorious that the quarantine regulations in other ports of entry are relatively, if not positively, inefficient, and that a uniform system is urgently demanded. Senator Chandler's bill, advocating the suspension of immigration for a year, is a very reasonable measure under the circumstances, in so far as it may give time and opportunity for the perfection of a comprehensive and practical scheme for utilizing a new national law. It is a valuable auxiliary measure, but not such an absolutely necessary one as without it a good quarantine should be a failure.

The bill introduced by Mr. Payne, Member of Congress from Maryland, a summary of which was presented in our previous issue, has many excellent features, but appears too complicated to work well in practice. His advocacy of a National Bureau of Health is eminently proper, but the details of its working are not such as would commend themselves to the good judgment of practical sanitarians. The sentiment of the medical profession of this country, as we interpret it, is in favor of more centralization of power than is given by the bill in question. Generally the more commissioners there are for the carrying out of the provisions of any law the worse for the law. The National Health Board law would have been as near perfection as possible were it not that it aimed to do too much through its multiple commission. It is obviously proper to centralize rather than divide the responsibility of enforcement of any law for National Quarantine. The simplest way is by the formation of a National Health Department, making the Secretary of the same a Cabinet officer, who is to be appointed by the President, as are also the various chiefs of bureaus. At present, however, there are, as shown in opposition to the bill of Mr. Raynor, so many conflicting elements nursed by the respective friends of the defunct National Board of Health, on the one hand, and the Marine Hospital Service on the other, that the practical solution of the question is likely to be postponed until late in the Session. In the meanwhile we shall be ready to give still further discussion of the subject.

PROSTITUTION AND THE PUBLIC.

THE subject of prostitution has been forced into public attention of late. As is well known, an eminent clergyman of this city—deservedly esteemed for the sincerity and uprightness of his character, as well as for his eloquence and determined purpose—has been trying to prove three things: 1, That the New York police department receives fees or bribes from the brothels, saloons, and gambling houses of the city; 2, that they know of the existence of these places, yet do not close them up, or restrict their activity, as the law directs; and, 3, that they ought to be closed, or restricted more thoroughly. The police department naturally deny the bribe-taking, and they appear to assume the position that brothels and gambling-houses must exist, and cannot safely be entirely suppressed. There is a very wide-spread conviction that the brothels and gambling-places do pay tribute, though it is hard to prove; Dr. Parkhurst, however, probably has the sympathies of the public with him in his first indictment.

With regard to the proposal for the entire and immediate suppression of houses of ill-repute, as advocated, the idea is impossible, Quixotic, and dangerous. A study of the subject from a scientific and sociological point of view would convince one of this, even if common sense did not show it. There are, perhaps, over two thousand houses of ill repute, and twelve or fifteen thousand professional prostitutes in this city. Statistics on the point can only be approximate. These prostitutes represent a special, degenerate, and, in a sense, criminal class. According to Jarnousky, nearly one-half present pronounced stigmata of degeneration; they are more decidedly a class by themselves, an anthropological species, than professional thieves. Over ten per cent. are of illegitimate parentage, a considerable proportion are born of alcoholic, syphilitic, adulterous, or criminal parentage. A large proportion have morbid sexual propensities and crave sexual excesses.

A very typical and instructive history of a prostitute is that of *Alphonsine Plessis*, a character immortalized and idealized by Alexandre Dumas in his novel and play, "La Dame aux Camellias." Her paternal grandmother, who was half-prostitute, half-beggar, gave birth to a son by a country priest. This son was a kind of country Don Juan, a pedler by trade. The maternal grandmother was a nymphomaniac, whose son married a woman of loose morals, by whom a daughter was born. This daughter

married the pedler, and their child was the Lady of the Camellias. Said lady had unquestionably the powerful and perverted sexual instincts of many of her class. She died childless, early in life, from consumption, Nature thus extinguishing the race.

People with the ancestry, the habits, the perverse instincts, of the prostitute class cannot be cured or reformed by the enforcement of municipal ordinances. If taken from their surroundings and placed where they can earn an honest livelihood, they, as a rule, go back voluntarily to their old mode of life. And they do this despite the fact that this life is always a short one, and is sure to end in sickness, degradation, and misery.

It would be absurd to suppose that adultery would be lessened or that prostitutes would cease their work if driven from their houses. A thief is just as much a thief whether in a hotel, a boarding-house, or in his own headquarters. All that municipal authorities can do as yet is to reduce the number as much as possible, make prostitution difficult, and prevent the disorderliness and the grossly lascivious performances which it has been shown are carried on in some places. This is not beyond the power of an efficient police.

As to the plan of licensing the brothels, Superintendent Byrnes would not have recommended this if he had made himself more familiar with the working of such methods elsewhere. It has been found that licensing has a tendency progressively to lessen the number of public houses; the women refuse to be registered, inspected, and have their liberty restricted. They go off to other places. This has been the experience in Paris; and such is the conclusion recently reached by Dr. O. Lassar (*Annals de Hygiène Publique*, November, 1892), who has been investigating the subject. In fact, by a curious *contretemps*, Superintendent Byrnes has proposed a remedy which would do eventually exactly what he blames Dr. Parkhurst for attempting now, viz., it would drive the prostitutes out among tenement, apartment, and boarding houses.

BRADYCARDIA AND THE ACTION OF ATROPIA ON THE HEART.

That peculiar condition of the heart in which a decided slowing of normal cardiac action is the only symptom is known as bradycardia. It is not an easy matter to trace this symptom to intra- or extra-cardiac disturbances. Dr. Dehio claims that by the aid of atropia this question can be decided. In the *Centralblatt für klinische Medicin*, No. 42, 1892, his studies on this subject are referred to. It is known that atropine paralyzes the intra-cardiac fibres of the pneumogastric nerve. Bradycardia which is due to excitation of the bulbar centre of the vagus nerve, or of its cardiac branches, may be controlled or inhibited by the use of atropine. A case of apoplexy is cited, in which the cardiac beats rose from forty-eight to one hundred and forty-four after a hypodermic injection of atropine. But in three other cases in which the bradycardia was the result of changes in the heart itself, atropine produced no effect. Dr. Dehio also believes that bradycardia is most frequently caused by changes in nutrition of the cardiac nerve apparatus. Local sclerosis of the branches of the coronary arteries is, according to him, a common pathological condition, associated with this symptom. Finally, he argues that some cases are due not to organic changes, but to temporary functional disturbances. Altogether it is apparent that further studies are needed before the subject of bradycardia can be removed from the field of speculative reasoning.

THE DOCTOR'S INTEREST IN GOOD ROADS.

The question of cycling is one that has attracted considerable attention of late from medical men, and while much has been written in favor of the practice not a few have raised their voices against it as being in many ways injurious, especially to growing youths. It is in moderation unquestionably of benefit to the full-grown man whose days are passed in the counting-room and whose hours of recreation would otherwise also be passed indoors, but like everything else it is liable to be carried to excess when it becomes a source of danger to health.

However we do not propose at this time to discuss cycling as a form of exercise, but would briefly refer to a reform of special interest to the country practitioner which wheelmen are working to bring about, namely, the betterment of our public roads. It is a deplorable fact, due no doubt in great measure to the conditions of our country's growth, that we have the worst highways of any nation of the civilized world. In the early days of the republic our roads were not so bad, although even then capable of improvement, but since the advent of the railway the highway has suffered from studied neglect. And in the Far West the railroad preceded settlement, so that the wagon-road was of very secondary importance in the eyes of the short-sighted pioneer.

But with the use of bicycling the wretched condition of our highways has become a subject of more general comment, and the wheelmen have set themselves to work to arouse the community to a full appreciation of the loss of time, money, and enjoyment occasioned thereby. It has been proposed to have a special department of road-making at the Chicago Fair. The advisability of having road-making a subject of special instruction in our colleges has been suggested, and Mr. Albert A. Pope, of Boston, has also circulated a petition calling upon Congress to create a Department of Roads as one of the branches of the general government at Washington.

Of course, the wheelmen are led to agitate this subject for their own benefit, as nothing is more disheartening to a cyclist than a long stretch of bad road, but the matter concerns more nearly the farmers and especially physicians practising in rural districts. The farmer may often choose his time for going out, and he may perhaps be able to wait until the roads are, comparatively speaking, passable before taking his grain to market, but the doctor cannot wait. No matter what the condition of the road he must go out when he is called and ride perhaps miles over dirt roads beside which the maligned "corduroy" is as a billiard-table. A smooth, well-kept road would save him many an hour and many a dollar which he now spends for repairs to his buggy. This movement is therefore one that concerns him most closely, and he might well exert his influence in the community in seconding the efforts of the cyclists to secure roads which shall be a help rather than a hindrance to communication.

RAILROAD SURGERY.

Much attention is being called to the fact that "Railway Surgery" is to have a separate section at the Pan-American Medical Congress. Why there should be such a specialization as this it is a little hard to understand. Railway surgery must surely be conducted on the same principles as ordinary surgery; a fracture, a sprain, a lacerated wound, cannot have any specific qualities because they were produced during a railway collision. It seems unlikely that a railway surgeon should need or should possess a special kind of technique or therapeusis.

As a matter of fact, we believe that the attempts at making the railway doctor a separate brand of the genus surgeon are a mistake. There is a justification for this sort of work, however, which is based on a kind of medical economics and the doctrine of expediency. The railway surgeon in this country represents a peculiar social feature of our institutions. He is not an independent professional man, but is the employee of a corporation and the servant of the same. The organization of these employees is probably a benefit to them, in that they secure unity of action in their attitude to the corporations. Associations of railway surgeons have, therefore, their special function in studying the business part of their profession, not the scientific.

AURICULAR VERTIGO AND DROWNING.

A French physician has recently come forward to dispute the popular notion that deaths by drowning are due to "cramps." In the *Northwestern Lancet*, these observations are made the subject of editorial comment. Our esteemed contemporary says that "A little reflection will show that to suppose these sudden deaths by drowning to be caused by cramp is to adopt an explanation that has several weak points. There is nothing about a cramp in the calf to make a good swimmer sink. Even if the pain be so severe as to induce him to keep his legs still, it is no difficult task for the expert bather to swim with his arms alone, to say nothing of floating on his back, an accomplishment which few swimmers fail to learn. All boys who have been in the water much know that one of the feats easily learned is to swim with "no legs" or "no arms," and it is certain that nothing less than a weight attached to the legs would pull a good swimmer under if he had free use of his arms. The man with cramp would at least be as well off as he who, unable to swim at all, falls overboard; such an one usually sinks and comes up two or three times before going under forever, struggles violently, and usually succeeds in crying out for help. It is noticeable on the other hand that the supposed victims of cramp usually sink at once, often without a cry, and rarely come to the surface again."

The views of Dr. Rutten, the French author referred to are, thus explained. Aural vertigo is the true cause of many accidents by sudden drowning. Dr. Rutten gives instances of swimmers who have been attacked with giddiness while in the water, in whom the subsequent symptoms of deafness and ringing in the ears has led to the discovery that the cause of the trouble was the pressure of water in the auditory canal, particularly where a wave has struck against the side of the head, a blow that has been known even to cause a rupture of the membrana tympani. Particularly is there danger of vertigo from the pressure of water in the ear if there be a perforation of the membrana tympani, no matter how small, for then the pressure may be brought directly to bear upon the fenestra ovalis and so affect the internal ear, whose semicircular canals are supposed to be the organs that preside over the equilibrium. In some cases no doubt the pressure may be increased by the presence in the external auditory canal of a plug of wax or a forgotten wad of cotton, which becoming dislodged or swollen may act as a piston in a syringe in increasing the pressure of the air upon the middle ear.

Among the cases described by the author, one is peculiarly instructive. It was the instance of a man who would certainly have drowned but for timely assistance, as he at once lost all control over himself. In another case the swimmer disappeared suddenly under water, but was rescued at once by divers. When he came to he said that he felt water enter his ear and immediately became dizzy and lost consciousness. Examination of this man's ears showed a slight and entirely unsuspected perforation of one of the drum-membranes.

The Lancet concludes by the following judicious observations: "The explanation thus furnished of some of the deaths by drowning is far more satisfactory than the old one of cramp, since the vertigo and unconsciousness are sufficient to account for the suddenness with which many swimmers disappear under water and the absence of the struggle for life that is to be expected under the circumstances. The practical moral it teaches is that those who have perforations of the drum-membrane should be particularly cautious about getting water into the ear while swimming, and should, as a safeguard, wear a suitable wad of cotton in the meatus."

Lawyer's Fees as Contrasted with Those of Physicians.—Thirty thousand dollars is not a very unusual fee for legal service in the defence of wealthy criminals, or in cases involving large interests. The slayer of Jim Fisk paid to his lawyer about two hundred thousand dollars. The late Hall McAllister received a fee of twenty thousand dollars on a compromise case and did not even appear in court. To the personal knowledge of the writer his time and labor in this case did not equal that of a surgeon who amputates a leg. The late John B. Felton received from James Lick fifty thousand dollars for setting aside his first deed of trust. A young and inexperienced attorney demanded a five thousand dollar fee in a breach of promise suit, the trial lasting a week. Attorneys by the dozen in San Francisco have received fees ranging from five to fifty thousand dollars. In the settlement of large estates attorneys' fees not infre quently reach one hundred thousand dollars. The attorney's fee in the Charles Lux estate will exceed a quarter of a million.

What's in a Name?—The inhabitants of Tottenham, London, have been greatly distressed because it was proposed to erect a new fever hospital there, and they feared the region would get a bad name. They have been pacified, however, by the promise of the authorities to call the institution the North-Eastern Hospital instead of the Tottenham.

News of the Week.

Honors to Medical Inspector Rufus J. Tryon, U. S. Navy.—General Crespo, Provisional Governor of Venezuela, has forwarded to Dr. Tryon, Fleet-Surgeon of the U. S. Squadron recently serving in Venezuelan waters, a letter of personal thanks for meritorious services, and the decoration of the Bust of Boliviæ. This South American order has been hitherto bestowed on two other distinguished North American surgeons, Drs. Samuel Sexton and Robert F. Weir, of New York.

The First Annual Dinner of the Alumni Association of the New York Hospital was held at the Hotel Marlborough on the evening of December 10th. Professor Thomas M. Markoe presided and acted as toast-master. The following toasts were responded to as follows: "Our Governors," Mr. E. T. Gerry and Mr. W. W. Hoppin; "Our Executive," Mr. George P. Ludlam; "Our Sister Societies," Dr. D. Bryson Delavan and Dr. W. R. Townsend; "The Old Hospital," Dr. D. B. St. J. Roosa and Dr. George F. Shrady; "The New Hospital," Dr. Walter Vought; "Our Emigrants," Dr. W. Wainwright, of Hartford, Conn.; "The Undergraduates," Dr. John Rogers. This association, composed of the graduates of the New York Hospital, was organized March 23, 1892, with Dr. Thomas M. Markoe, the oldest graduate (1842), as president, and has held three meetings since that time. The original officers were re-elected for the ensuing year, as follows: *President*, T. M. Markoe; *Vice-President*, W. Gilman Thompson; *Secretary*, E. T. Doubleday; *Treasurer*, H. A. Griffin; *Executive Committee*, F. P. Foster, Chairman, G. Roe Lockwood, C. M. Garrison; *Committee on Admissions*, C. S. Cole, Chairman, W. F. Martin, George H. Cobb; *Committee on Entertainment*, J. Adams, Chairman, Paul T. Kimball, P. C. Bolton.

Professional Services or Contempt.—A correspondent sends us the following card, clipped from a Cherokee County (N. C.) paper: "Dr. ——, physician and surgeon, tenders his professional services to those who are willing and do pay, and to those who are willing but cannot pay, but offers his contempt to those who are able but will not pay."

The Physicians in Monte Carlo are said to be forbidden access to the gambling-rooms in that principality. This is not because of any special concern on the part of the croupiers for the doctors' morals, but because they are trying to get their living in an honest way, like the waiters, undertakers, and tradesmen. They and their families are, however, graciously allowed free access to the concert-room.

The Right to Cross the Line of a Parade.—The aldermen of this great town appreciate the medical profession. They have given the right of way to physicians' carriages, and have recently passed an ordinance allowing physicians to cross the line of a parade or a procession.

The Association of Southern Medical Colleges was organized at Louisville November 17th. It includes fifteen Southern colleges. The permanent officers elected are: *President*, Dr. J. M. Bodine, of Louisville; *Vice-President*, Dr. W. D. Haggard, of Nashville, Tenn.; *Secretary and Treasurer*, Dr. G. C. Savage, of Nashville. Unless otherwise ordered by the President, the annual meetings of the Association will be held at the same times and places as the Southern Surgical and Gynecological Association. The new regulations with regard to the college courses, etc., will go into effect with the sessions for 1893–94. These regulations require attendance on three full courses of lectures of six months each; also a certain standard of education before matriculation.

The "Archivos de la Policlinica" is the name of a new medical journal published in Havana. The first two issues present a very neat appearance, and contain, besides clinical reports, a number of reviews of recent publications, and the usual abstracts of medical progress.

Preventive Inoculation for Cholera.—M. Hafikine, of the Pasteur Institute, is about to proceed to India to endeavor to apply his method to practical use in the saving of life in the regions of endemic cholera in British India and possibly in Siam.

Dr. G. E. de Schweinitz has recently been elected Clinical Professor of Ophthalmology in the Jefferson Medical College of Philadelphia.

A Royal Heart for Sale.—The heart of the French Dauphin, son of Louis XVI. and Marie Antoinette, was removed at the autopsy ninety-seven years ago, and has been preserved in alcohol ever since. The heart was in the possession of Dr. Pelletan who performed the autopsy. His son having recently died, the specimen is to be sold at auction.

First Annual Mexican Medical Congress.—A telegram from Mexico states that the first annual congress of the Mexican Medical Association closed its four days' session at Mexico City, December 12th. A number of interesting papers were read by prominent physicians of the republic. One of these that has attracted much attention was that of Dr. Carmona Y. Valle, on the subject of "Yellow Fever," in which the eminent authority related his investigation of that disease and the results obtained by his treatment of many cases by inoculation. He claimed that the inoculation method was highly successful where properly conducted, and that it was no longer a theory, but a practical preventive remedy. The paper contained many new propositions concerning yellow fever that have caused a considerable stir among the medical fraternity of Mexico.

The Deaths from Surgical Operation in this City during 1891 were 133 (*New York Medical Journal*). Ten per cent. of these deaths were due to the operations of circumcision, done presumably in those cases by rabbis. The greatest single item was that of deaths from laparotomy; these numbered seventy-six, or fifty-seven per cent.

Tobacco and Cholera.—The Berlin correspondent of the *British Medical Journal*, referring to the large trade in cigars manufactured in Hamburg, states that experiments made in the hygienic institute of the Berlin University have shown that the cholera bacilli die more quickly on dry tobacco than on dry glass-plates; that they do not multiply but quickly die on moist tobacco, and that tobacco-smoke quickly kills the bacilli.—*New York Medical Journal.*

A Medical Centenarian.—The death of Dr. Enoch Fithian, of Bridgeton, N. J., on November 15th, removes the oldest living medical graduate, as he was reported to be, of the University of Pennsylvania, from which institution he received his diploma in medicine in 1815. He was born in May, 1792.

The Chamber of Commerce of New York and National Quarantine.—The Chamber of Commerce held a special meeting December 13th, to receive the report of the Special Committee on Quarantine appointed on September 9th, which consists of Alexander E. Orr, Seth Low, Samuel D. Babcock, J. Pierpont Morgan, and Austin Corbin. Mr. Orr, who is vice-president of the Chamber, presided, in the absence of President Charles Stewart Smith, and Mr. Low read a voluminous report, with the appended reports of the Advisory Committee of Physicians.

The reports condemned the present system of quarantine in New York, and advised in favor of Federal control, giving reasons substantially as follows :

"1. The Federal Government being an indispensable factor in every quarantine crisis, it is only by giving to the Federal Government complete control that conflicts of authority and the weakening effects of official jealousy can be avoided.

"2. The Federal Government, in every crisis, through the various arms of the public service, is able to command an amount of expert co-operation entirely beyond the reach of a State Department.

"3. The Federal Government has at command the trained men who have to be summoned to the help of the State in time of peril. It is better to have the Federal Government directly responsible, instead of indirectly.

"4. To these may be added the further consideration that the co-operation of consuls with the Quarantine officials is a matter of growing importance. The Health Officer complains that he failed to receive the aid from this quarter to which he was entitled. It is clear that these officers would be less likely to be at fault as toward federal officials."

"5. An international supervision of infectious diseases is a probable and a very desirable outcome of recent experiences. Such an outcome of itself would necessitate a national Quarantine."

The committee concluded the report by offering the following resolutions :—

"*Resolved*, That the Chamber of Commerce memorialize the President and the Congress of the United States to enact, as speedily as may be, a suitable law placing the control of Quarantine at New York and at all other places under national control.

"*Resolved*, That the attention of Congress is respectfully directed to the injurious influences that continued indiscriminate immigration may have upon the welfare of this country, in the hope that careful investigation relative thereto may be promptly had.

"*Resolved*, That the thanks of this Chamber be extended to the Advisory Committee of Physicians for their invaluable services in connection with the recent quarantine at New York.

"*Resolved*, That the President of the Chamber of Commerce be requested to convey to the Governor of the State, His Excellency Roswell P. Flower, and to the Secretary of the Treasury of the United States, the Hon. Charles Foster, the high sense of appreciation in which this Chamber holds their active, intelligent, and public-spirited services during the recent quarantine."

The Late Dr. James R. Leaming.—At a meeting of the Faculty of the New York Polyclinic, held December 9, 1892, the following preamble and resolutions were adopted :

Whereas, It has pleased Almighty God to remove our beloved President and Emeritus Professor of Diseases of the Chest and General Medicine, Dr. James R. Leaming ; therefore be it

Resolved, That in the death of Dr. Leaming we recognize the loss to ourselves of a faithful officer and a trusty counsellor, and to the community at large of a skilful physician of great attainment, and a loyal and eminent citizen ; a man of rare geniality and cultivation, a stanch friend and a Christian gentleman, whose extraordinary gentleness, tender sympathy, and, above all, exemplary life, had crowned his advancing age with honor, surrounded him with devoted friends, and made his career well worthy of study and of imitation. His memory will be universally cherished and his name placed among the number of those who are illustrious.

Resolved, That the deep sympathy of this Faculty be extended to the family of the deceased, and that the foregoing be incorporated in the minutes of this meeting, published in the leading journals, and a copy sent to the family.

D. Bryson Delavan, M.D.,
R. C. M. Page, M.D.,
W. H. Katzenbach,
Committee.

The Late Dr. Robert Warren Greene.—*Whereas*, In the death of Dr. Robert Warren Greene, the Society of the Alumni of Bellevue Hospital has lost a fellow-member who, by his geniality and kindness of heart, endeared himself to all ; and,

Whereas, The members of this Society desire to show their sympathy and grief at the death of a man who gave such brilliant promise of an eminent and successful professional career, and whose nobleness of character, fine sense of honor, and many acts of charity and kindness to all who were in sickness and trouble, were appreciated by those who knew him more intimately.

Resolved, That we express, in so far as words may, the realization of the great loss sustained not only by this Society, but by profession and community, and extend to his bereaved family our heartfelt sympathy in their affliction.

And as a fitting tribute to his memory, be it further,

Resolved, That these resolutions be spread upon the minutes of this Society, and that a copy be sent to his family and to the medical journals of this city.

Egbert Le Fevre,
Austin Flint, Jr.,
William Evelyn Porter,
Committee.

Dr. Allchin lectured on duodenal indigestion recently before the Royal College of Physicians.

Society Reports.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, November 21, 1892.

SAMUEL B. W. MCLEOD, M.D., PRESIDENT, IN THE CHAIR.

Diet and Digestion: Their Influence on the Voice.—DR. J. MOUNT BLEYER, read a paper on this subject and demonstrated the alcoholic voice on the phonograph. The introductory part of the paper was written philosophically regarding digestion and diet. The next part of it was taken up with physiological discourse—as that of alimentation; the dual construction of man, and healthy alimentation; the wear and tear of the body and its reconstruction; the composition of foods; the composition of man and his nutrition. Then the precautions in alimentation to be observed with a view of preserving the integrity of the voice, dos and don'ts. He divides alimentation under two heads—the healthy and the unhealthy. In the healthy alimentation he meant the feeding upon diet or those kinds of foods which any animal or organism is designed to live upon, as indicated by the structure and functions of its digestive machine. The unhealthy is the feeding, again, upon food which the digestive organs cannot readily and perfectly digest, many comparisons being resorted to showing the truth of the reasoning. He gives a healthy bill of fare, and, as the night meal is of importance, he specially directs the patient to eat such food as will quickly digest, and such kind as will not produce either flatulence or fermentation. Many catarrhal troubles of the nose, throat, ear, and chest may be laid at the door of improper food, and therefore the digestive organs can be taken into account ninety times out of a hundred. He speaks of having had good results in those catarrhal diseases, by a simple, rigid regimen and local treatment. This method of healthy feeding, when once begun, must be kept up for the entire life. Deviation therefrom one must always pay for, according to the ratio of his deviation. Under the heading, the Composition of Man and His Nutrition, he speaks of vegetarianism at length in pros and cons, and then gives his modification of a vegetarian diet, to be adopted in individual cases. His modification consists in utilizing fats as an economizer of the albuminoids, and says that a vegetarian dietary, in which animal and vegetable fats enter freely, is a very much fuller and likely to be very much more satisfactory one than that from which all animal fats, except butter and cream, are excluded. This dietetic regimen he uses in complicated nose and throat diseases, with gout, rheumatism, or in any dyspeptic disorders that come under his care. He specially maintains that all cases must be individualized.

Choice should be made of those articles of diet which do not tax excessively the powers of the stomach. The special feeding indicated by the condition of the system acts as a means of cure in all diseases arising from unhealthy feeding. He says that healthfully feeding those tissues which require nourishing, and starving such as have been overfed or unhealthily fed, will in time restore the equipoise of an unbalanced organism. In order to exhaust the subject he was obliged to place most rules under heads of dos and don'ts. Among them he takes up the question of water-drinking—hot and cold—alcohol, beverages of all kinds, with the whys and wherefores. Then he touches upon the home usage of the Carlsbad waters and salts, both physiologically and therapeutically, indications, and contra-indications. Concluding with the question of smoking in its bearing on the care of the voice, with many other interesting points of value to voice-users.

After the reading of the paper he demonstrated by means of the phonograph a specimen of alcoholic chronic laryngitis as found in drinkers, contrasting this with a non-alcoholic voice. The phonogram was most true—as a record.

DR. J. R. MACGREGOR said, with regard to the difference between nitrogenous food and the carbo-hydrates, that late physiological investigations had shown the latter to be as much a source of muscular power as the former. The ox, for instance, put forth as great strength as any of the carnivora. The difference seemed to be not with regard to the amount of muscular force produced by the two kinds of food, but in the manner of its expenditure. The carbo-hydrates, including the vegetables, might be said to be the foundation of force, while the nitrogenous foods were for the discharge of energy.

He endorsed most of the propositions with regard to the use of food contained in the paper. It was not the eating alone, however, that tended in civilization to make life short; regulate our diet as we would, we still would not attain to the age of the South American physician, one hundred and ninety years, if we continued to live in other respects as we do in our cities. The emotional side of life had as much to do with the exhaustion of energy as the intellectual.

It would have been interesting, had the length of the paper permitted of more detailed reference to the influence of particular foods upon the different organs concerned in the production of voice, and the manner in which the changes in the local tissues modified the voice. Some writer had suggested that the injurious influence of alcohol in the throat was centred especially upon the epiglottis, but the speaker thought it would be found more general. Then there was the nervous influence produced through the recurrent laryngeal. He heartily endorsed all that had been said with regard to vicious results of alcohol.

DR. F. J. QUINLAN made some remarks upon unhealthy feeding and the use of alcoholics in causing congestion, this in turn resulting in pressure in the vocal apparatus, and thus interfering with voice.

Dietary Rules.—DR. J. H. TYNDALE thought two statements were applicable to the general subject: 1, The general condition should claim attention prior to the local; 2, discretion in prescribing the diet. Dietary rules could be laid down as follows: 1, For no one meal should there be a multiplicity of dishes, seldom should more than four be allowed; 2, the food should be plain, nothing particularly acid, spicy, etc.; 3, every mouthful should be chewed from twenty to thirty times (the Gladstonian method was a good one); 4, long intervals between meals, giving ample time for digestion and rest of the stomach afterward. Exceptions to the latter rule applied in acute wasting disease and in fat people, who should take one article and at more frequent intervals. Proper diet always meant a compromise between things which the patient liked and the physician's judgment as to what was best for him.

Heart of a Suicide.—DR. THOMAS H. MANLEY presented the heart of a young man who had shot himself twice through the lower chest with a view to committing suicide. One bullet had passed through the pleura and grazed the left ventricle; the other entered near by. The hemorrhage was internal. The temperature remained normal about twenty-four hours, then it rose, pleurisy set in, and between the loss of blood and inflammatory affection, death was caused in three days.

Incomplete Hernia Operation.—Dr. Manley presented a portion of the sac in a case of strangulated hernia which he had been requested to operate upon, but being then unable to go, the family physician operated, with assistance, and supposed he had reduced the hernia. Next day the symptoms became worse, and Dr. Manley found a tumor still present which proved to be the strangulated gut, the former operation having resulted only in reduction of the sac. The patient recovered.

A New Instrument for Dilatation of the Cervix Having a Vagino-uterine Curve.—DR. JAMES STAFFORD exhibited and described a new bivalve instrument for dilating the cervix uteri. He showed the necessity for such an instrument having not only a curve corresponding to

that of the uterus, but also one conforming to the curve of the vagina. The intra-uterine portion had tapering blades, not of very large size, as it was intended for dilatation and not divulsion. A bulb separated it from the vaginal portion to obviate introduction too far. The instrument was especially useful in cases of imperfect uterine development, attended by flexion, dysmenorrhœa, and sterility.

Opposed to Uterine Dilators.—Dr. George T. Harrison said he was opposed to uterine dilators, especially in the hands of general practitioners. Harm had often resulted from them. If dilatation were really necessary, it should be done gradually, as one dilated the urethra, by the introduction of graded sounds. With due antiseptic precautions, the laminaria tent could be employed. Rapid dilatation by bivalve instruments without an anæsthetic caused pain; it was liable to injure the tissues; the pressure was at two points only, instead of uniform all round like in using sounds.

Dr. H. J. Boldt said when he used a bivalve dilator he preferred one which was corrugated so that it would not slip. Any form of rapid dilatation was dangerous if done in one's office. It should be made an operation, with corresponding precautions, and performed at the patient's house, or in a hospital. The laminaria tent was useful, but must also be surrounded by antiseptic precautions.

Dr. Truax saw a decided advantage in the curve of the instrument presented over other bivalve dilators without the curve.

The President coincided with this remark, but said he preferred the sponge or laminaria tent.

The Author would prefer dilatation to the tents. He did not mean divulsion. Everything was aseptic when he used the dilator, as it was preceded and followed by tampons and antiseptic applications.

MEDICAL AND CHIRURGICAL STATE FACULTY OF MARYLAND.

Semi-annual Meeting, held at Easton, Md., November 15 and 16, 1892.

Dr. L. McLane Tiffany, President, in the Chair.

The Address of Welcome was delivered by Dr. E. C. Trippe, in which he greeted all the physicians present and thanked them for making Easton their place of meeting.

The President's Address was then delivered by Dr. L. McLane Tiffany. He thanked the profession of Easton for their cordial welcome, and urged on everyone present the importance of joining this, the State Society. This was the first meeting since the passage of the new medical law restoring to it the old right of granting the privilege of practising medicine in Maryland, and for this reason all regular members of the profession in this State should now become members of this society, and thus have their say as to who should practise in this State.

He said that all good work was not done in the great laboratories of the cities; that two of the greatest investigators and benefactors had done their best work while practising in the country; the one was Jenner and the other was Koch. He showed an old book of the last century that had been written by a practising physician of Easton, and which had many things in it which would still hold good at the present day.

The Modern Treatment of club-foot was the subject of a paper by Dr W. B. Platt. This subject is always important and has always elicited attention. Cases should be treated early to be treated successfully, but there are not many good results without operation. The disease may be local or of central origin. When subcutaneous tenotomy began to be practised, the results of treatment were better. In replacing a foot violent twisting does good; it may sound harsh, but it does not do the harm one would think. In these cases the foot is usually somewhat deficient in development. After tenotomy came the plaster bandage.

Formerly the foot was let go for ten days after operation, because it was thought not well to put it up at once. The next step was overdistention by means of an apparatus. Some had advocated excising a wedge-shaped piece, but this was not good. When the foot was replaced the bones had to form new facets. The resistance is much greater in congenital than in acquired club-foot, unless it has been walked on for a long time.

Dr. Hiram Woods asked what was the prognosis in infantile paralysis, and in all paralytic cases.

Dr. Platt said it depended on the time it had gone on. If too old, not much good can be done. If the motive power either in the brain or in the nerves be destroyed, nothing can be done. Sometimes the muscles can be brought to do something by faradization.

The Amœba Coli; its Importance in Diagnosis and Prognosis.—This was the subject of a paper by Dr. W. T. Howard, Jr. Since the first case by Osler in this country, it has been found several times. Councilman and Lafleur had reported fifteen cases. The amœba coli is about ten to twenty micro millimetres long; it has an ectosarc and an endosarc, and has two kinds of motion, a sort of wriggling motion and that by the aid of pseudopodia. These pseudopodia were very active at the body temperature, but became quieter as the temperature rose. The amœba may contain vacuoles, blood-corpuscles, fat-corpuscles, etc.

There are three kinds of dysentery with this amœba, the moderate, the grave, and the chronic dysentery. Diarrhœa is the principal symptom of the disease. The worst complication is abscess of the liver, and it occurred in eight of the fifteen cases of Councilman and Lafleur. The amœba can be found very easily in the pus of the liver abscess, or in a part of the stools.

Dr. S. T. Earle said that he had seen one case, and thought it was easy to recognize the amœba by the microscope. He should like to ask about the intermittent character of the diarrhœa. In his case he gave quinine internally and quinine by irrigation, and the man improved rapidly.

Dr. L. McLane Tiffany, in speaking of the clinical aspects of the case which had first led to the discovery of the amœba in this country, said it was in a young Hebrew physician, who had lived in Central America for some time and had suffered from dysentery and Chagres fever. He got better and finally went to Europe. There he got better and worse, and had exacerbations of fever with a subnormal temperature every seven days. His pulse was rapid and liver enlarged. He had made the diagnosis of multiple suppurative hepatitis.

Dr. William A. Canfield asked the size of the amœba under the microscope, as compared with other objects whose size was better known, and asked if the movements could be actually seen; or was there only a difference in shape when observing at intervals as there was with other amœbæ. Dr. Osler had shown him these amœbæ under the microscope, and his recollection of them was that the movements were not markedly active.

Dr. W. T. Howard, Jr., said in conclusion that he had purposely avoided saying anything about the treatment. Quinine had been used by some, and others preferred morphine and the sulphate of magnesium. It was not blood infection; the amœbæ are too large to get into the circulation and pass through the smallest capillaries. The organisms pass from the intestines to the liver. Their movements are in some cases, under the microscope, very easily seen when the fluid is warm, but they are not clear when it is cool, and then it is necessary to make successive drawings to notice the difference.

The Nose.—This was the subject of remarks made by Dr. John N. Mackenzie. The nose is much more an organ of respiration than of olfaction. The air is warmed and rendered moist before reaching the lungs; we should

breathe through the nose and avoid mouth-breathing. He quoted many interesting and humorous references on the nose as an index of character.

Some of the More Common Forms of Nasal Stenosis.—Dr. S. K. Merrick read a paper on this subject. We have learned much about this in the last ten years. There are few straight septa There are deformed and thickened septa. Hypertrophic rhinitis is a common cause of stenosis; it is often due also to deviation of the septum. The most common forms of growths in the nose are the myxoma, fibromyxoma, and fibroma. He treated these growths with the thermo-cautery, cold snare, and chromic acid. The cautery was very satisfactory.

The Importance of Determining the Cause of Repeated Attacks of Earache which Subside Apparently without Injury to the Ear.—This was by Dr. Hiram Woods. Many of these causes are overlooked. Certain throat lesions, such as chronic follicular pharyngitis, may cause earache. Post nasal adenoid growths may cause deafness, even though they of themselves are not very severe.

Dr John N. Mackenzie said that the origin of congenital malformations of the septum was doubtful, and there were only theories as to this point. Morgagni's theory was that the septum grew faster than the bones of the upper jaw, and consequently became twisted on itself.

The Importance of Symptom-treating in Pulmonary Consumption.—This was a paper by Dr. William B. Canfield. He referred to our as yet unsuccessful attempts to find a specific for tuberculosis, and the difficulties of treating the gastro-intestinal, the febrile, the nervous, and other such important symptoms; and some of those symptoms were so prominent that they almost masked the real trouble. With our present knowledge our treatment of pulmonary consumption should be largely preventive, but when it has appeared, then the symptoms furnish the therapeutic indications.

Genital Tuberculosis in Women; its Frequency and Clinical History.—This was a paper by Dr. John Whitridge Williams. It is a subject that has only been noticed within a few years. Cohnheim and Babes have described it. At the Johns Hopkins Hospital, his duty was to examine thoroughly and record accurately all specimens from the gynecological department, whether they looked diseased or not. Out of 169 cases in which the tubes and ovaries were removed, in 2 cases tuberculosis was macroscopically evident—that is, one and one-fourth per cent.—and in 6 others of these cases a microscopical examination showed evidences of tuberculosis which would have escaped detection but for the careful and routine examination carried on there. This, then, made 8 out of 169 cases tuberculous, or four and three-fourths per cent. In 96 cases there was inflammation, and in 8 of these, eight and three-fourths per cent., it was tuberculous, or one tuberculous in every ten to twelve cases of laparotomy for disease of the ovaries or tubes, or suspected disease. There were 2 cases found on macroscopic examination, and 6 with the microscope, that is, seventy-five per cent. of these cases were unsuspected. From these figures we may say that genital tuberculosis is three times more frequent than is generally supposed.

The order of frequency of genital tuberculosis, according to his experience, in the organs is as follows: Tubes, uterus, ovaries, vagina, cervix, and vulva. Genito-urinary tuberculosis is three times less frequent in the female than in the male. This may in part be accounted for by the difference in the organs, the manner of life, etc., of the two sexes.

The three modes of genital infection in women are: 1. From the patient herself. *a*. Through the blood. This is frequent. *b*. From the peritoneum. *c*. From other organs, such as the lymphatic glands, inflammations, fistulous tracts. 2. From without, in numberless cases, as from the fingers, infected linen, coitus with men who are infected with genito urinary tuberculosis. A few bacilli may get into the vagina and uterus with the semen and be washed away, but in the tubes they are better treated. It is not absolutely certain that this can occur, but it is very possible. 3. From bacilli from the patient. It may occur at any age, but preferably between twenty and forty, during sexual activity; secondary tuberculosis is more common after forty. Inflammations of the vulva from tuberculosis are not very different from other kinds of inflammation, but they are characterized by their persistency. Tuberculous metritis is much like other cases of metritis.

The diagnosis can only be made accurately and correctly with the microscope. Cancer of the cervix is clinically like it. The prognosis is always grave, and secondary affections are to be looked for. The treatment is largely prophylactic.

Circumscribed Abdominal Dropsy Simulating Ovarian Tumor.—This was the subject of a paper by Dr. Robert T. Wilson. He was certain at first that he had to deal with an ovarian tumor. There was dulness over the ovary, but it was clear on each side on percussion. Change of the patient's position did not change the position of the fluid. He operated and withdrew about two gallons of a pale yellow-greenish fluid, and in the bottom of the sac he found an agglutinated mass of intestines firmly adherent to the bottom of the sac. The mass measured 9½ x 6 x 3 inches, and was very much like a tumor. The walls of the sac were covered with small gray tubercles and were festooned with lymph. He removed the ovaries and tubes, and on microscopic examination they were found to be tuberculous. The patient had never been sick a day before she was pregnant. It was natural to suppose that she had a tumor, and had he tapped her as he had at first intended, he would not have been the wiser. Sir Spencer Wells has reported a similar case. He thinks an exploratory incision is very important More lives are lost through want of it than because of it.

Dr. T. A. Ashby said that the subject of genital infection with tuberculosis was very important, but that he himself had had no personal experience with it. We have gonorrhœal salpingitis, and why should we not have tubercular salpingitis? He does not think that salpingitis occurs from gonorrhœa as often as some would have us believe; it is more often from abortion and parturition.

Dr. W. T. Howard, Jr., said that the work of Dr. Williams had raised an affection of supposed rarity to one of more common occurrence.

The Relation of the Organs of Reproduction to Cerebro spinal Disturbances in Women.—This was a paper by Dr. T. A. Ashby. Perversion of the psychical centres is often due to menstruation, conception, etc. There is a close connection between the nervous system and the genital organs. These reflex disturbances are physiological within certain bounds. Lacerations of the cervix uteri are a frequent cause of nervous irritation. These neuroses frequently disappear with great promptness when the cervical tear is repaired. Oöphorectomy is often performed for excessive nervous excitement.

Dr. George J. Preston was glad to see Dr. Ashby take the conservative stand in a place where conservatism is so necessary. We have perhaps gone too far. A woman likes to have some place to put the cause of her nervous feeling, and the most natural place is to refer it to the reproductive organs. Pathological conditions of these parts will exert an influence on the higher centres. This is a complex reflex. The nervous system is also unstable, and this is the beginning of the trouble. The good of an operation may be often due to the effect on the mind, the rest, the quiet in bed, and not so much to the operation itself.

Dr. J. Whitridge Williams said that unless some pathological lesion could be found the operation was unnecessary. It was almost a question of malpractice when it was done without finding a lesion. A careful examination by bimanual palpation, under an anæsthetic, will enable the skilled gynecologist to make an accurate diagnosis before operation. From recent investigations by

himself and others, it was very probable that a large part of the ovary was composed of nervous tissue, and it was natural that such an organ should produce these nervous symptoms.

Dr. W. E. Moseley said that many a grave pathological change will cause no nervous symptoms, and many of the worst nervous symptoms are produced without pathological change. The influence of the lacerated cervix on the nervous system is most marked. He did not believe the moral effect of an operation is as great as some would have us believe.

Dr. A. K. Bond said that, looking at the subject from the standpoint of the general practitioner, many cases came for treatment too late. Many cases remain untreated too long, and then get into the hands of the gynecologist because the nervous symptoms were untreated. If these nervous symptoms were treated early they would yield, and the patient would get well without going to the gynecologist, who straightway proceeds to make an examination.

Dr. Robert T. Wilson did not think that the conscientious gynecologist would do this unless absolutely necessary.

Dr. Bond replied, then her friends would send her to another who would do it.

The Radical Cure of Hernia, was the title of a paper by Dr. W. S. Halsted. This is a very important operation. Most reputed radical cures are not cures at all and recur. In the sixteenth century, if taxis failed the patient died. The literature of the subject is very full. Paré, in the sixteenth century, wrote of it and tried to find a cure. At the end of the last century it was more generally understood, and operations were more frequent. Sir Astley Cooper has written the best work on it. All these operators showed great respect for the arteries, but in many respects the manner of performing the operation was about the same as now. Macewen's operations were an advance, but they were not successful. McBurney has done the best work in this country.

In 81 cases, at the Johns Hopkins Hospital, the speaker had operated on 59 by ligating many of the veins and transplanting the cord so that it is outside of the sheath and subcutaneous. The mortality is nothing. Bassini's results, on a much larger number of cases, were about the same. In 17 of his cases the hernia had not returned in two and one-half to three years, and in 42 from six months to two and one half years. A case can hardly be called cured unless it has remained well for three years or more, since many cases recur.

Some Minor Therapeutic Uses of the Galvanic Current.—This was a paper by Dr. A. K. Bond. His work had been done with the dry chloride of silver battery, and consisted of simple galvanization, cataphoresis, styptic, electric knife, electric sound, and cauterization with the electric needle.

Operation for Removal of a Peach-stone Lodged in the Œsophagus, was the title of a paper by Dr. J. M. T. Finney. It was a very difficult operation. The stone was so lodged that it could not be pushed down, and even when the stomach was opened it could not be pulled out of the œsophagus with the fingers. A sponge attached to a string and passed down into the stomach dislodged the stone. The wound was sewed up and healed. Later an abscess appeared in the spinal region, but was opened and the patient finally recovered.

Localization of Tumors of the Brain.—This was the subject of some remarks by Dr. George J. Preston. Brain tumor is more common than was formerly supposed. It occurs at all ages and in children. Men are more liable to it than women, from traumatism and syphilis. The diathetic tumors include the syphilitic and the tubercular. The sarcomatous include the sarcoma and glioma. We have also the psammoma. The diagnosis must be exact. Brain tumors have aided us in the localization of the brain functions. Prolonged, continuous, and intense headache is always suggestive of tumor. Localization of pain is of no diagnostic value, but tenderness on percussion is of great help. Other symptoms are vomiting, vertigo, neuritis, and optic atrophy.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE GROCERS' COMPANY AND SCIENTIFIC RESEARCH—DR. WILLIAM HUNTER ON THE PHYSIOLOGY AND PATHOLOGY OF BLOOD-DESTRUCTION—A SUCCESSFUL CASE OF RUPTURED HEPATIC ABSCESS—THE RADICAL TREATMENT OF SEVERE EQUINO-VARUS.

London, November 26, 1892.

Numerous attacks have been made within the last few years upon our great city companies and the administration of their large funds. Some of the companies have done much to disarm criticism by making generous contributions to various philanthropic and scientific objects. The Grocers' Company is foremost among those which have liberally donated in this manner. Some years ago they enabled the authorities of the London Hospital to add a new wing to their building by handing over to them a donation of several thousand pounds. More recently they have devoted some of their funds to endowing scientific research. Dr. William Hunter, Assistant Physician to the London Fever Hospital, was lately one of their research scholars, and a few days ago he commenced a short course of lectures, in which he gave an account of his investigations into the physiology and pathology of blood-destruction. In commencing his first lecture he observed that the literature on the subject was of the scantiest, and that no paper had hitherto dealt with the subject in a systematic way. The activity of the other tissues was so bound up with the condition of the blood that it was a matter of paramount importance to learn everything we could respecting it. The slightest deviation from the normal at any period might carry with it results out of all proportion to the apparent magnitude of the change itself. The lecturer said he regarded the blood as a highly organized tissue—one to which he would assuredly apply the term "living" did he not fear to be asked to define what life was. The relations of the various parts of the blood were, if less close anatomically, no less intimate physiologically and chemically than those of the cells and matrix of any other tissue. In the case of the plasma and white corpuscles the evidence of blood-destruction that we possessed was comparatively slight. The case was different with the red corpuscles; evidence of their destruction (hæmolysis) was afforded by a study of bile and blood-pigments. As regarded bile-pigment the evidence was of two kinds—that pointing to hæmoglobin as its source and that pointing to the liver as the seat of its formation. The crystalline pigment (hæmatoidin) frequently found in old extravasations of blood was chemically identical with bilirubin, the chief pigment of bile, and some of the pigments giving rise to the discolorations of bruises were indistinguishable from bilirubin and biliverdin. The genetic relationship between hæmoglobin and bile-pigment became clearer still when we considered the close connection between increased destruction of hæmoglobin and increased formation of bile-pigment; when hæmoglobin was injected into, or set free within, the blood, an increased excretion of bile-pigment in the bile ensued.

Since blood-pigment, wherever found, indicated death of red corpuscles, he had endeavored to ascertain under what conditions and in what situations it was normally to be found. He excluded from consideration pigment arising from extravasation or chronic congestion. He had made observations on rabbits, guinea-pigs, dogs and cats, ducks and pigeons, and on frogs, as representative of the classes of herbivora, carnivora, birds, and cold-blooded animals respectively. He had found blood-pigment in

the liver, spleen, and the red bone-marrow, occasionally in the kidney. Within the liver blood-pigment was found in two situations, viz., the capillaries and the liver cells. Pigment in the capillaries was usually distinguished by the large and varying size of its individual particles. The amount varied much in different animals and under different conditions. The chief factors influencing its presence and amount were: 1, The size and shape of the animal's red corpuscles; 2, the age of the animal—the pigment increasing with age; 3, diet and exercise—abstention from food and exercise increasing it; 4, certain pathological conditions might increase it, but not constantly, even with the same animal. The frequency with which pigment was found within the liver cells differed in birds and mammals respectively. It was usually found in the former and sometimes in large amount; in mammals it was either absent or only present in small quantities. Pigment-granules in the cells were uniformly small, while in the capillaries they were much larger and of varying size. Neither the amount nor the character of the granules was influenced by such factors as size and shape of the red corpuscles, old age, abstention from food and exercise—all of which influenced the amount of pigment within the capillaries. The only respect in which the conditions were the same was that in both cases a large increase in the amount of this pigment might take place in disease, or might be induced experimentally by the action of agents which destroyed the blood; the increase which might take place under such circumstances within the liver-cells was, however, not only more frequently met with, but was, with few exceptions, much greater than anything ever observed in the capillaries. Whatever favored the slow and gradual death of the red corpuscle, or its death as a whole, favored the presence of pigment within the capillaries to the exclusion of the liver-cells; whatever favored its more rapid destruction and its complete disintegration favored more its presence within the liver-cell, although not there exclusively.

The spleen was a favorite seat of pigment accumulation—apart from extravasation or congestion. The variations of its amount in disease were less striking than those observed in the case of the liver. A third seat in which a certain, though usually very small, amount of pigment might be found in health was in the large marrow-cells of red bone-marrow. Pigment might also be found in the kidney, though the only condition in which he had found it was pernicious anæmia.

What significance were we to attach to the pigment thus present? It had hitherto been usual to regard blood pigment (always, of course, apart from extravasation or congestion) as an indication of some previous destruction of blood. Its presence, however, even in large amount, might denote a lessened hæmolysis; conversely, its absence was not only compatible with, but might actually point to a greater and more extensive hæmolysis. There were two distinct processes in the blood leading to the formation of blood-pigment—one invariably doing so, the other occasionally and not necessarily. The first was marked by a slow decay of the red corpuscle, and its death and inclusion as a whole within the body of active cells such as those of spleen or marrow, or the leucocytes of the blood; the peculiar feature of this process was that the whole of the hæmoglobin was invariably converted into blood-pigment. The pigment thus formed was that which we found within the capillaries of the liver—never within the liver-cells. The other process was marked at the outset by a liberation of the hæmoglobin from the red corpuscles, either alone or in combination with part of the stroma of the corpuscle. The hæmoglobin thus escaped into the plasma of blood or spleen might be taken up by active cells, but its usual fate was to pass into the liver cell and be there broken up—the chief results of this being the formation of bile pigments and the excretion of a certain small amount of free iron in the bile. Formation of blood-pigment need not necessarily attend this destruction of hæmoglobin within the liver-cells. Blood-pigment had a very varying significance as an indication of hæmolytic charge. The process that led to the formation of most blood-pigment, viz., slow death of the red corpuscle, affected only the red corpuscle, and implied, indeed, an absence of charge in the plasma; such a process could not be termed "hæmolysis." The other process was the only one which could be rightly thus termed, as it was marked by changes in the plasma and leucocytes as well as in the red corpuscles. Yet it was this process which favored the disposal of hæmoglobin in ways which might leave no trace of blood-pigment behind. The conclusion was that hæmolysis was a process which might be unattended by the formation of any blood-pigment; it followed that the absence of such pigment in health, as was the case in young mammals, was quite compatible with the occurrence of a very considerable daily hæmolysis. What was the extent of the destruction of blood in health? The close relation between hæmoglobin and bile-pigment was presumptive evidence of a certain daily destruction of hæmoglobin, and a large body of evidence pointed to the liver as the seat of conversion of hæmoglobin into bile-pigments. There were reasons for believing that it was within the liver-cells themselves, and not in the capillaries, that hæmoglobin was thus transformed. This conclusion carried the further one that whatever hæmoglobin was daily broken up to form the bile-pigments must have escaped from the red corpuscle into the plasma, and thence passed into the liver-cell. In other words, some degree of active hæmolysis was an event of everyday occurrence.

At the last meeting of the Medical and Chirurgical Society Mr. J. W. Hulke reported a case in which a large liver abscess (which had previously emptied itself through the lung) burst into the peritoneal sac. There was extreme collapse, but on the second day afterward the peritoneal sac was opened, a large quantity of pus evacuated, and the sac flushed out. The patient recovered.

Mr. Edmund Owen read a paper on "The Radical Treatment of Severe Talipes Equino-Varus," in which he advocated for severe cases the adoption of the operation introduced by Dr. A. M. Phelps, of New York.

WHY THEY DO NOT PAY.

To the Editor of the Medical Record.

Sir: In a recent editorial the lack of business qualities is made one of the principal reasons why physicians fail to receive proper remuneration for their services. This may be true in some instances; but the fact remains that, as a rule, the public discriminate unfavorably toward the physician as well as toward the clergyman.

With many the last claims to be met are the pewrent and the doctor's bill.

Many who are strictly honest, and will pay eventually, will say, when they meet their family physician, "Doctor, I am coming around to see you pretty soon; I have paid every bill I owed this year except yours."

In some cases prompt payment may be insisted upon, and even enforced by legal proceedings; but most practitioners have a large proportion of patrons who are exempt from legal process, a privilege they are not slow to take advantage of.

And this they will continue to do so long as our laws for the collection of debt remain unmodified.

Among them are men wearing good clothes, and smoking good cigars; some of them, in our churches, are exhorting their fellow men to lead pure and honest lives; others, if we may believe their eulogies, are walking the "golden streets" and sounding the "golden harps," but they owe us just the same.

Among the working-classes the idea is quite prevalent that every physician, after a few years' practice, must be very wealthy, and his services should be given to them

gratuitously, or, at least, that it is no crime to refuse to pay him, as the following case, in the knowledge of the writer, illustrates:

A farm-hand was ill with typhoid fever, and faithfully attended by a physician. When he was convalescent his employer said to him: "I will pay you for the months that you have been sick, and, if you wish, a month in advance, as you will have to pay your physician." "Oh!" was the reply, "I am a poor man, I don't think I ought to pay the doctor anything."

It has been said that when the physician receives no other remuneration he has the consciousness of having relieved suffering humanity and gained the gratitude of his patients. But, unfortunately, we hear more of gratitude in theory than we see in actual practice—a quality receding as convalescence advances.

"Three faces wears the doctor—an angel's when sought,
And a god's—the cure half wrought;
But when, that cure complete, he seeks his fee,
The Devil looks, then, less terrible than he."

A kind-hearted physician may attend an indigent family, for years, without hope of fee or reward; but let the tide of fortune turn with them, and a competency become theirs—will they continue to employ him? Oh, no! They will employ one who lives upon a more aristocratic street and has a liveried coachman. They "do not like to employ a physician who attends so many poor families," and, with a shrug of the shoulders, intimate that they have a very poor opinion of his skill.

These views may seem rather pessimistic, but they are facts easily proven.

The representatives of the healing art are, very properly, dispensers of charity; even the brightest lights in the profession give services, gratuitously, to the most abject pauper. But so long as they are devoting their lives to the interest of medical science, and to the amelioration of the sufferings of the human race, so long will they fail to receive prompt and cheerful remuneration for their services. Human nature is a paradox.

MEDICUS.

PHYSICIANS' ACCOUNTS.

To the Editor of the Medical Record.

SIR: In the line of your recent editorial upon the slack business methods of many physicians, it may be worth while to add that much of their slipshod way of keeping accounts is doubtless due to the comparatively recent practice of using one or the other of the labor-saving methods instead of such as are in vogue among merchants, manufacturers, financiers, and, indeed, nearly all other business men the world over.

The number of physicians who have not the time to keep a set of account-books by the ordinary method of single entry is comparatively small, and there can be little doubt that its adoption would cultivate an attention to methodical details which would result in the saving of many dollars.

The ready methods so generally used by physicians provide no facilities for keeping an account of income from other than purely professional sources. Few, I believe, attempt to keep a record of their expenses of living or their income from investments other than such data as are contained by a bank-book of deposits and the stubs of their check-books; and the making of an annual balance-sheet which will show the profits and losses during the year is most rarely undertaken, unless it happens that the physician is the executor or trustee of property belonging to other persons.

With regard to the legal value of physicians' accounts as ordinarily kept, it may be stated that courts have usually refused to accept the customary visiting lists and such hieroglyphics as are used to indicate the nature and date of professional service, as proper evidence thereof, but have demanded that a book of original entry, in the form of the day-book in commercial usage, specifying the nature of the service and the charge therefor in a manner that can be understood by a jury without the aid of explanations, should be produced.

Many physicians who have acquired sufficient property to yield a comfortable support for themselves and their families when they are aged will be found to have had a training in commercial pursuits before becoming physicians, and thereby acquired methodical habits of keeping accounts, which have contributed to, if, indeed, they have not been the chief cause of their prosperity.

If, upon commencing practice, young men could be impressed with the importance of looking after their accounts with the same care that they would use if they were engaged in mercantile pursuits, and of adopting the same methods as those which business men have found by long experience to be most desirable, we would less often hear of those who reach old age in comparative poverty in spite of years of painstaking and arduous professional labor.

Yours, etc.,
F. A. CASTLE, M.D.

NEW YORK, December 5, 1892.

RIGIDITY AFTER DEATH FROM STRYCHNINE.

To the Editor of the Medical Record.

SIR: In your editorial on strychnine poisoning by one Cream in England, in the issue of November 19th, it appears to have been claimed "that a person poisoned by strychnine would be after death preternaturally rigid, and there was a suggestion that that rigidity would be more or less permanent."

In January, 1888, I saw a body some hours after death from having taken at least ten grains of strychnine, and to my great surprise there was a total absence of rigidity of the body, because I had previously noticed preternatural rigidity in the dead bodies of dogs and cats poisoned by strychnine. Shortly afterward I noticed in Wharton and Stille's "Medical Jurisprudence" that convulsions may not be produced by a very large lethal dose of strychnine, the fatal result being in the nature of a shock to the nervous system. In the case to which I refer there was no history of convulsions prior to death, and there was no rigidity after death; so that there may be some relation between convulsions before and rigidity after death.

At the same time I saw another man suffering with spasms of moderate intensity from the effects of the same poison. He recovered.

JOHN P. WALL, M.D.

TAMPA, FLA., November 21, 1892.

THE DEATH-RATE OF CHICAGO.

To the Editor of the Medical Record.

SIR: The communication relating to the health of Chicago in your issue of November 26th, if it was really written seriously, and not as an over-statement intended to injure the cause it seems to favor, suggests some comments. By the "cause it seems to favor" I understand a local feeling against the city mentioned, that apparently exists in some parts of the country.

To believe that Chicago is a pestilence-breeding place, dangerous to pass through, which increases the death-rate for fifty miles around it, seems to me much more unreasonable than to accept the *prima facie* evidence of its mortality statistics. The writer of the communication also seems to be unaware of the fact that Chicago has annexed the most of its suburban villages, and that their statistics are included in its own.

As to the "poisonous water-supply," I do not believe that it exists at the present time, or that the inhabitants of Chicago, drawing their water from four miles out in Lake Michigan, run any greater risks than do those of other towns who imbibe the drainage of the inland ba-

sins of small streams. The conditions of last May and June were altogether exceptional, and even should the floods be repeated they could not reproduce the then existing state of affairs.

It also seems strange, to one who has by travel or residence had opportunities for comparison, to read of the "poor and expensive food-supply" of Chicago. I need say nothing as to its reputation as one of the greatest food marts of the world.

Undoubtedly Chicago has many sanitary deficiencies, but it has also some decided advantages, and that its rate of mortality should be low is not at all impossible. It certainly seems wrong for anyone to state or insinuate that its authorities send out falsified statistics, unless he is prepared to support the charge with adequate proof.

H. M. BAUMSTER, M.D.

HARLTON, CONN., November 29, 1892.

THE SANITARY CONDITIONS OF CHICAGO.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In a recent editorial you ask, "Why does Chicago announce so low a death-rate?" I have lived in Chicago most of the time since it contained but twelve thousand inhabitants. I have carefully studied its conditions, and it is clear to me why it does. I know no large city so favored by nature in its sanitary surroundings. Those who believe in special providences might be pardoned for thinking that when the foundations of the earth were laid the necessities for a great city here were foreseen and a fitting site for it provided. It was given a rude, but excellent climate; we grumble a good deal about it—as we are apt to do about everything we do not pay for—but it is very invigorating. It is conceded that the inhabitants of Chicago have shown great energy. This is not due to its people so much as to its climate. A muscle apparently dead will contract under the stimulus of an electric touch. Men could not breathe the air of Chicago without showing some signs of life and vigor. The city is situated on an extensive plain, with no confining elevations near it. The winds sweep through its rectangular streets from across the pure waters of Lake Michigan and over surrounding prairies from which malarial poisons are not exhaled. Intermittent disease is almost unknown in Chicago. Gases that must escape into the air from the streets of every city are speedily carried away by this ventilation of nature. The city stands so near the level of Lake Michigan that no dwellings are built in the ground. The poorest of its people are obliged to live in the sunlight and breathe air that is unconfined. While our water for drinking is not ideal, it is not bad, and most of the time it is good. It is true some of the sewage of the city is now discharged into Lake Michigan, but we receive our water through two tunnels under the lake, one opening two miles and the other four miles from the shore, and ordinarily beyond the reach of any outflow from the mouth of the river. Most of our sewage is emptied into the Chicago River, from which the larger portion of it is pumped into the Illinois & Michigan Canal, through which it is emptied into streams that carry it to the Gulf of Mexico. Free dilution and oxidation in the open air soon destroy its noxious qualities. This outlet by the canal will be enlarged to the capacity of a river. The city has provided for this purpose a fund of more than twenty millions of dollars, the contracts are let, and the work is in progress, with the promise that it will be completed in four years. Intercepting sewers will convey all the sewage of the city into the river and its waters will at all times flow into the Gulf of Mexico. This work is primarily undertaken for sanitary reasons; though doubtless it is influenced somewhat by commercial considerations, for when completed it will enable the shipping of the Mississippi and its tributaries to enter the lakes, and give to that river a second commercial mouth at Chicago.

EPHRAIM INGALS, M.D.

34 THIRD STREET, CHICAGO, ILL.

"THE INTRODUCTION OF ANÆSTHESIA."

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Your issue of December 3d is more than usually interesting by reason of the learned paper upon "The Achievements of American Surgery." In that portion of his paper devoted to the subject which forms the caption of this communication, Dr. Dennis remarks, "Morton, *at the suggestion of Dr. Jackson*, anæsthetized a patient on October 16, 1846, while Dr. J. C. Warren removed a tumor from the patient's neck." (Italics mine.)

Dr. Dennis has fallen into an error in saying that "Morton, at the suggestion of Jackson, anæsthetized a patient," etc., if by this statement we are to infer that this alleged suggestion influenced Morton or contributed to the introduction of anæsthesia, and I am sure he will pardon me if in a communication otherwise so just and uncontroversial I point out what seems to me an inadvertence. In making an obvious effort to be impartial Dr. Dennis has, in the single point I refer to, that of the suggestion, placed Dr. Morton in a light wholly inconsistent with the facts.

It is universally conceded to-day that the operation above referred to initiated the immediate practice of surgical anæsthesia throughout the civilized world. Morton stood alone at that critical moment in an amphitheatre of doubters, audience and surgeons alike. Upon him would fall the ridicule and the obloquy, if not also an indictment for manslaughter, in case of failure. But happily the operation was painless; anæsthesia was demonstrated and published to the world. It is little known that prior to this demonstration and Morton's first publication not one word had ever appeared in print on the part of those who afterward claimed to be "discoverers." Their relations to the discovery were *ex post facto*, their thoughts after-thoughts, their sight hindsight, their position that of would-be "jumpers up behind." Ingenious and pertinacious were their efforts to get a footing. The most ridiculous of these attempts is probably the claim of Jackson, based upon his remark of "Why don't you try ether?" and the further claim that he suggested to Morton to go to the hospital. Neither suggestion was of value to Morton. Several men had tried ether already and failed. As Sir Benjamin Brodie said when the discovery was announced, "I have heard of this before. I have tried it on guineapigs and it killed them. The question is, Is it safe?" Three months prior to this "try-ether" remark Morton proves that he had been buying large quantities of sulphuric ether from the druggist, Metcalf, and had consulted Metcalf & Wightman about its properties. But why did not Dr. Jackson try ether himself? "Did you make one little experiment?" said the late Professor Louis Agassiz to Jackson at a meeting of the Boston Academy of Arts and Sciences, adding, after receiving a negative reply, "It would have been better if you had." On another occasion Professor Agassiz said to Jackson, "If Dr. Morton had killed his first patient would you have accepted the blame as you now ask for the honor?" Dr. Jackson remained silent. And why did Jackson not go to the hospital and administer the ether? But he was not even aware that Dr. Morton had asked Dr. Warren for a public test, and he had never witnessed an operation under ether until a month after anæsthesia left the Massachusetts General Hospital, an accomplished fact. A week after the crucial operation at the hospital he was thus interrogated by the Hon. Caleb Eddy: "Dr. Jackson, did you know at such time" (October 16th) "that after a person had inhaled ether and was asleep, his flesh could be cut with a knife without his experiencing any pain?" He replied, "No, nor Morton either; he is a reckless man for using it as he has; the chance is he will kill somebody yet."

These and many more facts of the same tenor, supported by affidavit, have not the true ring of discovery or important participation in discovery on the part of Jackson. His whole story was the ingenious fabric of a para-

noiac, who successively claimed discovery after discovery of others, notably that of the electric telegraph from Morse, only to fail, as was most natural, to substantiate any real claims for credit in any of them. His obvious and final years of insanity, sad and deplorable as they were, offer the only creditable explanation of his position in the introduction of anæsthesia.

Long, in 1842, went far beyond Jackson, he tried ether—and failed; his patient was, it is true, "under the influence of an anæsthetic," as Dr Dennis says, but only so far under it as the self-inhalation common to the "ether frolics" then in vogue would produce—a stage now recognized as primary anæsthesia, a momentary peripheral numbness of the skin. Venable, the patient, says of this operation: "I continued the inhalation of the vapor until the operation was over," "I felt a little pain," etc. Had Long seized the towel and forced the etherization, the discovery might have been made then and there.

Wells also tried nitrous oxide gas and failed. Even after the demonstration of ether anæsthesia in 1846, so late as 1847, Dr. Wells repeated his Boston experiment (a failure) in the amphitheatre of the New York Hospital, before Mott, Francis, Parker, Van Buren, and others, and again absolutely failed. Evidently nitrous oxide anæsthesia, as Wells understood it, did not work. Others solved the problem, and that not until 1863.

The efforts of Long and Wells left no sequence—neither they themselves, nor others, could repeat such success as they had—the world was no happier for their efforts, there was yet no practice of anæsthesia.

And while it is well to accord all possible credit to Long and Wells and Jackson, it is yet just to recall that Morton stood, self-reliant and alone, at the first public demonstration of that discovery, which by strange contrast a young and industrial nation like America contributes as her quota to the relief of suffering humanity, a contribution which it is safe to say will be last to be celebrated, if celebrated at all, at the approaching Columbian Exposition.

Dr. Dennis further refers in kindest spirit to the "tragic termination of life in the case of Jackson, Morton, and Wells," the former, and probably the latter (at least it is kindest to believe so) dying insane, and Morton dying "without worldly means." Is it not perhaps more tragic that he should be allowed to so die by a Government who filched his discovery in its great war, by a public who absorbed it without recognition, and by a profession who, individually, the world over, make profit out of it daily.

Yours, very truly,

WILLIAM JAMES MORTON, M.D.

NEW YORK.

Medical Items.

Cholera in Paris in 1892.—Our correspondent in Paris writes under date of November 22, 1892: "The impression being quite general that the Paris authorities concealed the real state of the cholera epidemic in that city, it may be of interest to the readers of the MEDICAL RECORD to know the facts. Paris being the great pleasure city of the world, and having at all times a large floating population, there is no doubt but what, at the outset, the authorities and corps médical in general made light of the disease, and quieted the anxiety of any inquiry with the assurance that it was not Asiatic cholera, and was sporadic in character.

"From the *Bureau de Statistique municipale* I have obtained the weekly reports for the past year, from which I have taken the *résumé* of the history of the disease from its beginning to the present date.

"The first intimation of the disease appears in the report for the week ending May 19th, seven deaths, under the simple heading of Enteritis or '*Diarrhée cholériforme*,' without comment. In the report for the week ending May 26th appears: 'There were three deaths from *Diarrhée cholériforme* or *Choléra nostras*, which is not called epidemic, as there are a few cases in Paris every summer.' A foot note to this report informs the public that the municipal authorities send for, disinfect, and return free of charge, all objects and effects pertaining to cases of contagious diseases. June 9th, reports six deaths in Paris and three from the neighboring suburbs. June 16th, four in Paris and four from the suburbs. June 23d, four in Paris and seven from the suburbs, of *Diarrhée cholériforme*, *Cholérine*, or *Choléra nostras*. June 30th, five in Paris and eight from the suburbs, of *Cholérine*, *Choléra*, or *Choléra nostras*. July 7th, four in Paris and four from the suburbs, from the same causes. July 14th, fourteen in Paris and eighteen from the suburbs, and of which part are ascribed to cholera asiatica. July 21st, there is simply noted, under the head of diarrhœa, fifteen deaths in Paris and twenty-nine from the suburbs, of persons over five years of age. July 28th, fourteen in Paris and fifteen from the suburbs attributed to diarrhœa. August 4th, twenty-one in Paris and eleven from the suburbs under the same head. August 11th, seventeen in Paris and seven from the suburbs under the same head. August 18th, is noted as follows: 'The deaths from diarrhœa are diminishing; there were twelve in Paris and only two from the suburbs during the last week.' August 25th, appears 'The diarrhœal diseases caused twenty-two deaths in Paris and two from the suburbs, this week.' During the week ending September 1st, there was a large augmentation in the number of deaths, and they are noted under a separate heading as *Affections cholériformes*. One hundred and twelve deaths in Paris and ten from the suburban districts. From this date the deaths are recorded daily under the heading above mentioned. September 8th, for the week, one hundred and seventy-seven in Paris and twenty six from the suburbs. A foot-note again calls attention to the free disinfection by the city authorities, and reports seventeen hundred and thirty such disinfections made during the month of August. September 15th, one hundred and forty-eight deaths in Paris and forty-two from the suburbs. September 22d, seventy-one in Paris and seventeen from the suburbs. September 29th, sixty-four in Paris and fourteen from the suburbs. October 6th, sixty-three in Paris and sixteen from the suburbs. October 13th, thirty-two in Paris and thirteen from the suburbs. October 20th, seventeen in Paris and seven from the suburbs. October 27th, four in Paris and two from the suburbs. The city authorities were applied to for free disinfection in two thousand two hundred and ninety-six cases of contagious diseases during the month of September. November 3d, four deaths in Paris. November 10th, four in Paris. November 17th, no deaths in Paris, and only one from the suburbs.

"The cases noted as from the suburbs, are persons taken with the disease outside the walls of the city, who were transferred to, and died, in the city hospitals. As will be noticed, the figures given are for each week, and considering that Paris has two and a quarter millions of inhabitants, the disease cannot be said to have reached the extent of an epidemic, and was at all periods well controlled; and with its peculiar civic and medical governments, and the most wonderful sewage system of the world, an epidemic of cholera is little to be feared."

The Latest Cholera Story.—A stranger arriving in Paris the other day, says the *Daily Graphic*, was accosted at the station by a man who stated that he was a sanitary agent. "Have you been disinfected?" he asked. "No," replied the traveller. "Very well, then, follow me." And the "sanitary agent" led the way to a house in the rue Lafontaine, near the station. At his bidding the traveller entered a large bare room and took off all his clothes, which were taken away to be disinfected. Time passed; the traveller grew cold and impatient, tried the door, only to find it locked, and at length realized that he was the victim of a new and ingenious form of robbery.

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Original Articles.

PRECISION IN THE TREATMENT OF CHRONIC DISEASES.[1]

BY S. WEIR MITCHELL, M.D., LL.D.,

HONORARY FELLOW OF THE NEW YORK ACADEMY,
PHILADELPHIA, PA.

GENTLEMEN: I have twice, to my regret, been obliged to decline requests to speak before this learned body, and lest I might seem to you ungracious, I have come hither now asking the privilege of which I had twice been unable to avail myself. Perhaps, ere I am through, you will be sorry that I did not add another to the number of my refusals. I ask you, beforehand, to pardon me if I speak, as I must, on some familiar points, or if I too often refer to my own work. If I am discursive, and wander over a variety of subjects, this, also, you must charitably excuse.

A part of the difficulty in effectually securing the attention of the best of the mass of our profession, lies in the fact that to do this a busy man must go on insisting in too frequent writings upon the value of any new drug or method. As we of necessity use the journals to do this, what is said does not always reach a complete or fit audience. This applies largely to our American journals, which are quite too numerous, and which very often note in a hasty paragraph what ought to be elaborately stated, when it is a method or plan which is urged, and which, if it needs to be at all understood, needs to be stated with care. We only share, I grieve to say, in the malady of haste which afflicts our literary journals. A flood of hasty statements, or of mere brief notices of new books, to-day constitutes in our general literature what, with easy indifference to the meaning of the word, we call criticism. The grave, well-considered reviews of former days, such as are still seen in France and England, and are apt to be the pleasant product of the leisure of thoughtful scholars have ceased to exist for us. Only in our great dailies have we competent and elaborate reviews. Our medical literature has suffered a like unpleasant change. Brief statements as to new books, new drugs, new methods, succeed one another in our journals with bewildering speed. One misses the grave scholarly estimates common in other days; the accurate, large-minded handling of a whole subject by men of rank and esteem in the profession. A medical journal is apt to look nowadays like an advertisement fence with hurried graphic *affiches* of the latest novelties. In this rush of equality of setting forth of the good and the bad we run some risk of not soon enough comprehending the more troublesome, and yet more valuable methods. Soon or late they win; for our great jury in the end is seldom wrong. I somewhat suspect that the numberless new drugs may a little have set us back in medicine, by offering so much to distract attention from the surer methods of general management in chronic disease.

No doubt there is a look of implied simplicity in the temptation to slay disease with a triple daily discharge of a promising drug; and how very promising the drugs are just now, and the journals, and the covers of the journals! It is a therapeutic fairyland. More natural means and more slow methodical management are apt to be set aside. They win no easy hearing. I have had many illustrations in my life-work of these passive and active obstacles in the way of teaching men new ideas, when these were troublesome, because accurate and carefully elaborated.

As I have been asked abroad and at home, over and over, to speak on the subject of the treatment which in Europe is known by my name, and here as Rest Treatment, I may assume either that it is not yet fully understood, or that I am presumed to have made in it further changes worthy of attention. I have, however, little to add. Its origin and history might be worth telling had I the time.

Yet something remains to be said as to those who use or misuse the method in question. My desire to speak as to this text is justified by the debate which took place upon Rest Treatment last year in one of your own societies. It then became clear that not all who assumed to use it had read my book, and that others failed to apprehend in it a systematic procedure, which involved the regular doing of several distinct things, scarcely one of which could be left out at will without damage to the desired result.

As a contrast to this loose method of dealing with my work, let me call attention to the words of William Playfair. He says: "I have used this treatment freely; I have nothing to add to it and nothing to subtract." The honor and fair dealing of such a statement strike one with pleasure. Of what one of your own members has said of it in a recent book I hesitate to speak. It has really given me new courage to bring this treatment before you to-night. I had supposed, indeed, that I had said my final word on Rest Treatment; but now I am tempted to think that in the way of insisting on its use, its complete use, there is still room for me to break my silence.

You all know what I mean by Rest Treatment. It is a final resort. Let tonics, change of air, exercise fail; let the gynecologist have said his last word, or, what is more likely, done his last operation; then comes this rather troublesome method. I avoid detail here. We put a person in bed, use massage, electricity, excessive feeding, and only at need, seclusion; forbidding letter writing, and in many cases for a time, reading. I continually hear of "modified rest treatment"—and a "kind of rest treatment;" and a physician says (and this is literal), "I have used all the details of rest treatment, but did not think it needful to keep the patient in bed." A doctor writes me, "Is massage really indispensable? Another, "According to the rules of your admirable treatment, I kept Mrs. B—— in bed five months, and now she will not get up at all. What shall I do?" Of course, men are free to leave out the part of Hamlet, but then I prefer that Ophelia be left out also, and naturally I object to this being called my treatment, and to being held to critical account for failures so caused.

I shall say presently what I think about certain reasonable variations upon rest treatment, but now I am thinking of the typical instances of emaciated, broken-spirited, hysterical women, or of exaggerated neurasthenia—rarely unmixed with hysteria—cases in which no one can afford to depart from the rules I have laid down and yet hope to succeed by this method, at least. It is with just such sick people that the invertebrate doctor is sometimes driven to compromise; he says, "Ah, well, my dear, you shall have all the treatment except rest in bed; I won't insist on that." Or the woman says, "I must have the dear children every morning." The physician

[1] An address delivered before the New York Academy of Medicine, December 15, 1892.

has not the courage to say, "I am not attending the children." So she has her way and the treatment fails. I, of course, prefer not to be made accountable for other men's moral or intellectual bankruptcies, or to be held responsible for the debts of indecision and weakness. Such men are like *Punch's* fashionable London physician. Says the Duchess, "Dear doctor, I could not think of it. What! cod-liver oil and whiskey!" "Certainly not, Madam. Shall we say curaçoa and cream?" But of course no one here has ever given way to this form of feebleness.

This is a treatment of detail, and just how you manage the minutiæ is of great moment. No treatment ever yet devised can be carried on without intelligent thought. The story of Sir Joshua Reynolds and the need an artist has to mix his colors with brains, has here its applications as elsewhere in life. The abler doctor lives above all text-books. He lives, too, above the mere fashions of his time in medicine. In the days of excessive bleeding there were Cardans, and later on Sydenhams, who knew when not to bleed, just as to-day there are among you those who comprehend that the lancet has still its place in medicine.

One sign of signal ability in the medical practitioner is the clear apprehension of the fact that, whatever the disease, it is an individual who exhibits and eternally modifies its phenomena. It is, too, the great men of our guild who never lose sight of detail in medicine. No patients so personally modify disease or its expressions as the nervous or hysterical; in no plan of treatment is success so entirely at the mercy of industriously perfected details of treatment, intelligently apprehended, and reasonably modified. Therefore is it that it is the best doctor, as a rule, who does best even with so definite a treatment as the one now considered. I have, indeed, known a clever woman to take the whole rest treatment with the aid only of my book and a maid. I have known nurses who had with brilliant success carried it through without a doctor. I have known very good physicians to fail, either because they lacked some moral quality, or because they slighted the details and left too much to nurse and rubber.

Let us linger over these a little. The nurse for rest cases needs a large amount of patient interest, power to distract or amuse, capacity to read aloud, tact and good-tempered cheeriness. It is a sharp test of character to shut up together for six or more weeks two women, and one of them ill and nervous. Divorce ought to be easy and ever ready. If you use rest treatment, question your patient early as to her nurse, and if she does not like her, even if in your eyes she is one of the best, it is wiser to give her up for another. I have had to change thrice in a week, displacing attendants who seemed to me good, and yet I won my battle at last. You cannot change the patient, you cannot change the doctor (how much one sometimes would like to do this!), but the nurse you can change.

Then there is the rubber, apt to be a gossip and to talk of cases. You will do well now and then to give a little time to watching her at her work. Generally the Swedes rub badly and without method; are fond of mere effleurage; or slap and pound the distracted, nervous woman into a condition of excitement. I have often been myself massèd in Europe, where such massage as rest cases need is ill understood. On the whole, it is far better done in this country. The American plan of muscle-kneading, carefully and systematically done with thought at the very finger-ends, is what we want. I am inclined to think one of the best tests of good massage is the power to rub out hard, inflammatory deposits left after repeated pelvic inflammation. In these cases I use the massage as often as thrice daily, and at the close, where there are weak muscles and relaxed ligaments, employ a system of resisted movements of the thigh and belly muscles. Why one woman can rub a patient and leave her sleepless, excited, uneasy, and another succeeds in soothing her and in calming her nervousness is even yet to me a problem which I can solve by change, but cannot understand. The early use of massage, the dosage of it as to time and vigor, need attentive care; after a week it takes care of itself, but rest assured that for folks who do not exercise there is no tonic to compare with it. The charges made for massage in New York seem to me excessive, but this is in your own hands.

There have been so few unfavorable comments on this method here and in Europe, that in looking over the many papers it has evoked, and the Prefaces to the translations of my book in German, Russian, French, and Italian, I find little to answer. Some have set aside the daily use of electricity as needless and expensive. It is the one thing you may omit; I do not advise you to do so. In some cases it leaves the extremities warm when massage does not. It is apt to create at first some nervousness; therefore, for two days at the start, the nurse (and all good nurses can use electricity in this simple form)—for two days, I say, I ask the nurse to let the battery act as usual and to employ the conductors in due form without allowing any current to pass. The patient thus gets accustomed to an unusual remedy, and if nevertheless she be thus excited or made nervous, can then be told that no electricity has been used, and that future nervousness must therefore be laid to the account of her own watchful anxiety.

And so as to drugs. These nervous people are afraid of drugs, or full of queer prejudices about them. If you give malt extracts (Wyeth's or Bass's are the best), they can be made to dissolve "that dreadful iron she could never stand," or be the unguessed carriers of mild and repeated aperients. I once had a too clever patient who declined to take arsenic or hyoscine, both of which I thought essential in her case. She asked the nurse if I had put either in the malt, but did not guess that the three oranges she took daily received each a hypodermatic injection of the two objectionable drugs. By and by, when she was mending, I told her, of course, and henceforth gave, in other and ordinary ways, whatever I willed to give.

I have elsewhere stated the modifications to which we may submit the treatment by rest. The most important has been elaborated and stated with care in Hare's "System of Therapeutics," by Dr. J. K. Mitchell. Its success is a fair illustration of the power for therapeutic good of a life conducted for a time on schedule. And here again you must pardon me if I urge in your treatment of chronic disorders something of the accuracy we all carry into the management of acute diseases. It is really more essential to write out in detail how a man should live in order to get over a chronic malady than an acute one, where nurse and doctor are ever at hand. Let the following schedule of what we call partial rest explain my meaning. We have to deal, let us say, with a case of moderate neurasthenia and insomnia, with or without dyspepsia. In a word, you are to treat a woman not ill enough to be put to bed, not well enough to be cured by mere tonics, or even by these with change of air. You all of you know these cases. What I propose is to ask this patient to live by schedule, which may be modified to suit the case. I shall not read the too elaborate details, but I shall ask you to accept as exemplars copies of the typical formal scheme, which in every such case I have written out with care, because in many of its details it must vary with the patient. Remember it is not for a doctor, but for the patient.

Schedule for Partial Rest Treatment.—A.M.: On waking, cup of cocoa. Take bath. (Temperature given.) Lie down on lounge while using drying towels; or better, be sponged and dried by an attendant. In this process the surface to be rubbed red, or, if drying oneself, to use flesh-brush. Bed or lounge again. Breakfast. Before each meal take three ounces of malt extract; aperient at need in malt. Tonic after each meal. Detail as to breakast diet. If eyes are good, may then read seated in bed. At 10 to 11 A.M., one hour's mas-

sage. Rest one hour; may be read to, or read if eyes are good, or knit. At this time, 11 A.M., four ounces of beef soup or eight ounces of milk. At noon may rise, dress slowly, resting once or twice a few minutes while dressing, and remain up until 3 P.M. See children, attend to household business; see one visitor, if desirable. 1 to 1.30 P.M., malt, etc., and lunch. Detail as to diet. At first, as a rule, let this meal represent dinner. Tonic, and after it to rest on a lounge, occupied as above, reading or being read to. If possible, to drive out or to use tramway, so as to get air. Walk as little as possible. On return from drive repeat milk or soup. About 5 P.M., electricity, if used at all. Rest until 7 P.M. Supper at 7 P.M. Detail as to meal. Malt as before, with or without aperient, as occasion demands. Tonic. To spend evening with the family as usual. Best not to use eyes at night for near view. Bed at 10 P.M. No letters to be written for two months, when most of these details have to be revised.

After two months of massage it should, in these cases as in complete rest, be used on alternate days, and by degrees given up. If the nurse or masseuse is able to teach the patient the use of Swedish Movements, it is desirable that these or some definite, slowly increased system of chamber gymnastics be continued for months. Finally, walking must be resumed with slow and systematic increase. After the second month I write out a schedule of less restriction, to be followed for six months.

What I dread most at the start, in all cases for rest, is grave insomnia. Whether it be accompanied by a state of mild mental excitement, such as we all know, or is a pure incapacity to go to sleep, or to stay asleep; or whether it be in popular medical belief a congested state, I am apt at once, in bad cases, to use thrice a day lithium bromide, at first in thirty-grain doses, at noon, at 6, and 9 P.M., given in the malt or not, and soon decreased grain by grain. If I want a positive aid at bedtime, I prefer sulfonal in hot water. But of greater value are some of the hydro-therapeutic devices—and best of these is what is known, or not known, as the "drip-sheet." Just how this is to be given is of the utmost importance. The following memoranda, which I shall not read to you, but shall ask you to read hereafter, must answer to show how careful one must be, in my opinion, as to these details. I give it here in brief much as I do to a patient not under the immediate care of a nurse. I cannot help adding that several of the most useful of the water processes are neither taught in our schools, nor so accurately in hydro-therapeutic text-books as to be of much value to the general practitioner.

Memoranda for Use at Bedtime of Drip sheet.—Basin of water at 65° F. Lower the temperature day by day by degrees to 55° F., or to still less. Put in the basin a sheet, letting the corners hang out to be taken hold of. The patient stands in one garment in comfortably hot water. Have ready a large, soft towel and iced water. Dip the towel in this, wring it, and put it turban-wise about the head and back of neck. Take off night-dress. Standing in front of patient—the basin and sheet behind—the maid seizes the wet sheet by two corners and throws it around the patient, who holds it at the neck. A rough, smart, rapid rub from the outside applies the sheet everywhere. This takes but two minutes, or less. Drop the sheet, let the patient lie down on a lounge upon a blanket, wrap her in it, dry thoroughly and roughly with coarse towels placed at hand. Wrap in a dry blanket. Remove ice wrap; dry hair; put on night-dress. Bed, the feet covered with a flannel wrap.

If all this seems to you as you read it too absurdly minute, I shall feel some regret. Yet believe me, it is worth the trouble, and the drip-sheet a remedy past praise. If it fail, a pack may succeed; but this is more familiar to you. I doubt if the use of the drip-sheet is as well known.

Since rest treatment has taken its place in medicine, I, and others, have extended its use. In the treatment of chronic alcoholism rest in bed for a few weeks has obvious values, and, combined with skim-milk diet and massage, is often of use.

In all forms of neuritis, local or general, rest is essential, and in alcoholic neuritis, rest, massage, milk diet, and the use every three to six hours of what I may call cold and heat alternates, will often triumph rapidly This use of cold and heat is effected by putting the feet and hands in iced or very cold water a few minutes, and then applying in turn to each extremity the greatest heat endurable by mopping with soft towels dipped in nearly boiling water. The limb is then replaced in the cold water, and after three or more alternate uses of heat and cold is taken out, warmed well, and left dry.

Obstinate cases of chorea are best treated by rest, absence of friends and of all excitement, massage, and, of course, arsenic or what not.

Again, I treat all grave cases of morphia habit by absolute rest in bed. This alone has easily seen advantages. If the case be a very bad one, before I take away the drug I like to use for a time massage, very large doses of bromides, and to train the stomach, which is our worst foe, to endure a diet of peptonized food, preferably milk. The subsequent chance of escape with moderate suffering is thus largely increased, and when we are free from the more immediate consequences of laying aside the opiate, we easily return to normal diet. The common sense of all this must, I think, be clear to you, and some of what I have said is novel as well as useful.

My remarks in regard to neuritis lead me to say a few words about sciatica, which is nearly always some grade of neuritis. At least twenty years ago, I began to treat such sciatica by local splint rest with from two to three weeks of local use of ice, if rest alone failed me. Although I have over and over called attention to these means, they have not so captured professional confidence as I could desire. Last year I wrote on them a lecture in the International Series, where it is, I fear, pretty well buried amidst some good, and some poor, clinical lectures. As I have of late modified the treatment, and am sure from my own experience and that of Professor Osler, Dr. Sinkler, and others, of its great value, I beg to ask you to consider it with me anew. In any obstinate sciatica, where I can exclude spinal cord disease, constitutional states, tumors, etc., I put my case in bed. Then I give cod-liver oil, iron at need, full diet, and milk between meals. A long flannel bandage is put on at once rather tightly from the foot to the groin, and renewed twice a day. At the side of the limb a long splint is secured by a few turns of bandage. The splint should reach from axilla to ankle, the knee being bent a little, the heel secured from pressure. The splint and bandage are kept in place from two to four weeks, night and day; once a day, when these are removed, the leg is slowly and very moderately flexed and extended. This treatment is in constant use at the Infirmary for Nervous Disease. If it fails, it is usually because the malady is at first, or has become, spinal. The rationale of its use is, I think, clear. 1. The flannel bandage lessens the blood in the leg. 2 It protects the whole skin surface from the excitation of contacts. 3. The enforced immobility makes all motion impossible, and so the two uses of the nerve cease. It is in splint and we get physiological rest. Since I have used the bandage the cumbersome use of ice along the nerve-track is less often required. At the close of the treatment, massage, used with extreme care, may hurry the recovery. If there are persistent pain points, mild surface cautery may be employed at last, but for all details as to how to get the patient afoot and keep his gains, as to use of ice at need, etc.—in a word, as to all minutiæ which make for success (indeed, very frequent and permanent success), I must refer you to the lecture in question. I might have said far more, for, of the value of these means I am very sure, but I am talking to an audience of accom-

plished men, and I expect them to preach to themselves the sermons for which I but venture to furnish the texts.

This lecture has assumed the discursive character of a talk, and still relying on your indulgence, I venture to turn aside and ask your attention for a few minutes longer to some thoughts about pain, our constant foe, and especially to some forms of pain. I have often wondered why the great Being, who started us under certain laws upon the long career of reproduction, evolution, and self-modification, should have designed clearly a progress upward, and yet set in our way such limitations. We might all have had one eye for distance and one for near view; we might to some extent get on without the sense of pain; and that we could do with less of it is shown by the fact that some women remain for years without the pain sense. In one case of mine a hysterical paralytic recovered really useful health, and except herself and myself no one knows that she cannot be hurt by knife, or fire, or a blow. The interior organs still feel pain as usual. All other forms of skin sense are as keen as ever. This woman used to hurt or burn herself from want of care; now she has learned to take heed. I have seen many such, but only one other where the general health was as competent. She doubts now whether she would accept anew the natural condition of the pain sense. And do we really need it after it has served to give the educational sensory warnings of childhood? Once, says my patient, pain taught me to fear or avoid fire; now, warmth does this and suffices. The speculation is a curious one. I found by chance, of late, the following case of a man, said never to have known pain. The observer, Dr. Paul Eve, was fortunately a witness so good as to leave no doubt as to the truth of the statement. It is much to be regretted that this unique history should not have been more full.

Case of Natural Anæsthesia (Paul Eve's Surgical Cases, p. 771).—Dr. Eve says he knew the patient; for years he was intimate with his family physicians. They had often spoken of Mr. A——'s peculiar incapacity to feel pain. He became at last Dr. Eve's patient and died of erysipelas, apparently made worse by repeated applications of tartar emetic ointment, used by the sick man in excess because they gave rise to no pain. The remainder I quote in full.[1]

"Mr. A—— was about fifty-six years old at the time of his death. He was of sanguino-leuco-phlegmatic temperament; was a corpulent man, weighing about two hundred and fifty pounds, and had been a free liver. He was a lawyer by profession, of good intellect, being a man of strong mind and body, and had acquired considerable reputation as an advocate and politician.

"And now, in relation to his possessing a natural state of anæsthesia, the following facts are submitted: During a political campaign, not liking the appearance of a finger injured in a *rencontre*, he bit it off himself and spat it upon the ground. He had at one time an ulcer on a toe, which resisted treatment for nearly three years. Mr. A—— told his physician at the time, and has since repeated the same statement, that from first to last it never gave him any pain. An abscess also formed at one time in his hand, involving in its process the whole forearm and arm, which became enormously swollen up to the body and threatened his life. The lancet had repeatedly and freely to be used, and was followed by a copious discharge of pus for several weeks. During the whole treatment he said he experienced no pain. He said he felt no pain when his eyes were operated upon for cataract; neither did they inflame. I can vouch for his statue-like immobility during the second operation. When his neck was pustulated by tartar emetic ointment he did not feel it, but ordered the application to be repeated. I made three incisions with a bistoury in his neck to relieve erysipelatous inflammation. He was so unconscious of the operation that after it was performed he asked me to do it, that he might turn over on his back in the bed. He told his attending physician that he never suffered pain from any cause whatever until his last illness. For some days after its development he complained of the erysipelas, and then passed into his usual insensible condition before the state of coma supervened.

"It is proper to say that Mr. A—— was a man of great probity, and never boasted of being insensible to pain. The only cause suggested for this truly singular and peculiar condition of the system of this patient, is the free use of alcoholic potations, to which he was at one time much addicted. But others have drank more than ever he did without producing the same result. We think the case of sufficient interest to deserve a passing notice."

One would like to know how much inconvenience this man suffered from his peculiar lack of pain sense. I have in vain made effort to learn more of him. I use his case first to turn your attention to the curious speculation of man's capacity to learn the value of other modes of warning besides pain, and then as a text for my final remarks in regard to certain forms of pain.

I think if there be one thing more than another that we all dislike to treat, it is pain in the back. As a rule, in the study of cases of backache, one easily excludes certain things as causative. We know the so-called spinal irritation, the renal aches, the reflex from hæmorrhoids, the obvious offspring of ataxia, and the other distinctively featured neuralgias. Very frequently we are pulled up short, and, if intellectually honest, say to ourselves we do not know. A word is wanted for this negative decision. It is unpleasant to confess ignorance in blunt Saxon—we might easier say we had made an *Agnosis*. Accept my label, and let us go on.

Among these annoying cases are a certain number due to strain. You are familiar with the acute pain which comes when, a few little fibres having been torn of a sudden by the violent action of their fellows, a small hemorrhage follows, and then, perhaps, long-lasting mischief. But this is not what I mean. A man who is out of condition, gonty, rheumatic, or on the down-hill of life, makes a prolonged and unusual muscular effort, as in rowing or in restraining unruly horses; or it is a woman not well, or who at her menstrual times lifts a patient day after day, or stands too long. At times the subject who suffers is an athlete over-trained, or with muscles over-used. As a result of such conditions we have a pain in the back which, in a few hours or by degrees, reaches a maximum of annoyance. Is it a disorder of muscle or of nerve-centre? The pain in the back gets a variety of labels as doctor after doctor treats it and fails in his predictions of success. The intellectual vanities of most of us must pretty often have been crippled, for a brief hour at least, by these cases of pain in the back; but that cripple recovers easily. I confess myself to a prophetic sense of defeat when a man, especially a man, tells me that he has old chronic pain in the back. Very often it will prove to be one of these rather mysterious evolutions, the final offspring of excessive taxation of that neuro-muscular group which is, of all others, in most constant use; in fact, never out of use except when we are at rest supine.

The ache is, in these cases of strain, at the pelvic attachments, and runs down into the sacral and gluteal region; a permanent but variable ache, with slight and rare tenderness in this place or that, increased by exertion and troubled by an east wind. Sometimes it needs careful study of a life-history to bring out the true cause, or causes, for most disorders have several parents. As it is worse for much exertion, so, too, is it worse on waking in the morning, and long continuance in one position seems for a time to increase the ache and the attendant stiffness. Such pain, the result of what I venture to call chronic strain, whether muscular or nervous, may be slight, or enduring and disabling; indeed, may be incurable like some head strains, for you may strain nerve-cells as well as muscle-fibres. I use the word

[1] Southern Medical and Surgical Journal, 1849, vol. v.]

strain for lack of one more descriptive. These cases run here and there, wear jackets, plasters, are burnt, and what not. I said that some can no man cure. If the case be that of a woman, those pathological scapegoats, the womb and ovaries, get the credit, and with this new sin upon them are sent forth into the wilderness of surgical enterprise, leaving the diagnostic sinner relieved and released from further mental exertion. For some men, indeed, the ovaries are veritable treasure-houses on which they draw at will any amount of explanatory pathology.

You will pardon me if I say here that the causes of these distressful backaches escape detection, as a rule. Also if I urge that their early treatment by long rest and certain accessories gives the sole chance of permanent cure. Once this disorder is fully in possession, the incessancy of use of the parts concerned makes relief difficult. We treat these cases at the Infirmary by entire rest in bed for some weeks, by use of very hot water applied with hot wet mops to the back over a thick flannel. To use thrice a day, for half an hour, moist heat, as hot as can be borne, and not to blister is, let me assure you, not only most valuable, but needs a first-rate nurse. Then, once a day an hour's massage, mostly of the back, is added, and such general means as seem obviously needed. But let me say, too, the massage must be most searching, and the position of the back must be altered during its use so as to enable the rubber with thumb and finger-ends to reach and work at every part which can be gotten at. This triple means will cure some of these cases, and if used early, a good many; and then at last you may have to add, when the man gets up, if the case be an old one, some form of support or back splint.

The pathology of these cases is not very clear to me. But turn with me to a recent and very applicative research, and it may help us to comprehend this and certain other unsolved problems. All function must depend on ganglionic accumulation of appropriated and specialized material, which is expended and altered during activity. Says Dr. C. T. Hodge in a recent and valuable essay, "All admit coarse, visible changes as a result of normal use of glandular cells. It is my purpose," he adds, "to see how far this is true of nerve ganglion-cells. What difference is there between a cell long functionally stimulated and its fellows long at rest?" Dr. Hodge showed to the satisfaction of the American Physiological Society, two years ago, that after fatigue by excessive electric stimulation of the related nerves, the ganglion-cells undergo coarse changes. Thus these cells become smaller, the nucleus shrinks and grows jagged in outline, the surrounding protoplasm diminishes and loses materially its power to stain with osmic acid. Finally, numerous vacuoles appear in the spinal ganglion-cells, and in the brain-cells the shrinkage is still greater, and the pericellular lymph-spaces are more and more apparent.[1]

Once seen, these changes are such as easily enable one to say at a glance "This cell is tired; that cell is not." Dr. Hodge's first results were observed after electric stimulation, but now he has in press a paper I have read, in which he shows that such fatigue as arises from the flight of a bee or a bird, or the excessive tire of a chased fox, or the long journey of a homing pigeon, leave on the cells of spine and brain the most distinct signal-marks of exhausted protoplasm. Also excessive tire through muscle use is far more emphatic in its results than from electric stimulation. Even the nerve-fibres share in these results of work. The longer and the harder the work the plainer are these alterations, and the slower is the sequent repair. It takes twenty-four hours to repair five hours of electric stimulation. How easily one figures to oneself a state of too frequent and too severe work, repeated over and over before full repair is possible, as in time competent to carry the cells past the ready possibility of normal reparation.

See now what this means for us. You have at present only two words to describe the states of head or spine which follow excessive or difficult use of nerve, muscle, or mind. One man insists that the essential condition which should guide our therapeutics in these cases is cerebral anæmia; another, that it is cerebral congestion. There may be present the one or the other condition. Usually you do not know. Or, if there be too full or too empty vessels, are these not to be thought of as merely more or less mischievous accompaniments, or it may be, results. When we use imperfect eyes so as to fatigue to exhaustion the muscles of co-ordination or binocular relation, it seems probable that we must cause in their directing ganglionic cells states of tire with emphatic alterations. These by and by ring the signal-bell of pain, as worn-out tissues are apt to do soon or late. When Romberg wrote his much-used phrase, "Pain is the prayer of the nerves for healthy blood," he said a wise thing of limited value.

There are more things of which the nerves complain than of lack of normal diet; and one is the too perpetual demand on some imperfect part of the human machinery of which they make a part. The cry of pain seems to me, then, like the creak and squeal of disordered mechanism—more as if ill-used tissues had taken to profane language, than like any form of prayer.

In the case of the eyes, if ganglionic exhaustion has gone beyond normal ease of repair, we have increasing frequency of headaches and sometimes one form of that singular disorder, permanent headache. There may be congestion or not. The guiding therapeutic thought should, I think, be some conception of ganglionic masses wearied past the possibility of easy restoration. During war we used to see men so worn out by marching that the whole system of musculation and innervation became paretic. In these acute asthenic states the normal timetable of repair was disobeyed, and six months were needed to rebuild the ruined tissues.

It seems to me a vast gain to be able to add to our explanatory statements some demonstrable, reasonable explanation besides congestion or anæmia; also, it is of use to have ocular evidence of coarse change in connection with fatigue, and consequently with that readily-caused fatigue due to the effort to get normal vision with abnormal visual machinery. Then, too, Dr. Hodge's report encourages us to search anew and with confidence the neurasthenic organs in our rare post-mortem opportunities; assuredly we shall find obvious alterations; functional disease must always involve material tissue-change, just as does all normal function. If long continued, it must end at last by causing further functional incapacities due to more and more definite and lasting structural alterations—as normal function results in tissue changes which are, so to speak, the ruts of habit.

The more we become materialists in our views of so-called functional disease or disorder, the more likely are we to cure them. Take, for example, the various headaches of eye-strain. Once fully admit that long eye-strain involves tissue-change in the related ganglions, and we shall see that to glass correctly bad or imperfect eyes is not enough. And just here the oculist fails, if he is only an oculist. Certain headaches due to eye-strain continue despite his glasses. Then another man glasses the eye, and so on. What you really want is to correct the eyes, and to treat the over-wearied ganglia by putting the whole economy in the highest state of health. Then, indeed, and then only, are your glasses of much value; for there may be acquired states of a region, or of the whole body, in which the normal exercise of a healthy function is able to cause local or general distress; as when natural defecation gives rise to fainting, or healthy digestion troubles an excitable heart or an irritable brain.

I linger over this because I so often see the oculist or the general practitioner disappointed in the therapeutic influence of glasses, where obviously the eye is the starting-point in the product of headache. It is best on

[1] American Journal of Psychology, May, 1889.

the whole, in every such case, especially in the middle-aged, to explain that the glass rarely does its work suddenly, and that the habit of pain is apt to require added treatment which may be long and troublesome.

Headaches, as I think, furnish very interesting illustrations as to the causative relation of lowered states of health to pain. A man with bad compound hypermetropic astigmatism reaches middle age without knowing that he has bad eyes. A wife's illness, a business strain, or what not, taxes him sorely; thenceforth he has headaches, easily relieved by glasses. A woman has some defects of the ocular muscles. Her first nursing seems to set up headaches. They are called anæmic. She is treated until her blood-count is normal. There is no relief. Glasses cure her. At times women with bad eyes suffer only at the menstrual time from headache, which is not alone a womb reflex, and not alone eye-strain, but one of those abominable combinations of which we see so many. Glasses sometimes stop these headaches by removing one factor from the equation of mischief, which is then no longer equal to pain. Nor are these theoretical cases.

It had been my intention to discuss at length this matter of multiple causes in disease, and still using the cephalalgias to point out the frequency with which numerous conditions acting together at last evolve pain in the head.

I had meant also to deal anew with the cases in which a patient may have several forms of headache.[1]

But I have held you quite too long. As presiding officer of many meetings of medical men, I have been the more or less willing victim of those who talk at length of what their hearers know as well as they. Now and then I, myself, have a chance to test the patience of others, and this liberty I fear I have used with dreadful license to-night.

REPORT OF THE FOURTH LAPAROTOMY ON A HYSTERICAL PATIENT.[2]

By JOSEPH D. BRYANT, M.D.,
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If the case to which I am to call your attention this evening were not one of unusual occurrence, and therefore of especial interest, I should be inclined to apologize to you for presuming to recite it; as such a course as this often appears to me not unlike begging the question when asked for a paper, and too, at the expense of the dignity and sincerity of the narrator as well as the patience and respect of the listeners. However this may be, the patient's name is N. N——, aged twenty-two, female, and an artist by profession. She was admitted to Bellevue Hospital, February 23, 1892. Her family history in no way bears on her medical history, and therefore will be passed. Her medical history, previous to admission, is somewhat striking, and in view of after developments concerning her, is quite suggestive of a unique personality.

1. She had had pneumonia twice, she said.

2 Also, typhoid fever and acute articular rheumatism three times, and diphtheria once.

3. She had had inflammation of the bowels three times, as she called it. The first attack of which lasted twenty one weeks, the second, six months, and the third, fifteen weeks. Each of these attacks began with pain in the left iliac region, was followed by chill, fever, and vomiting of blood, and attended with bloody stools. Each attack had led to a laparotomy. The first, according to her statement, was done by Kocher, of Halle, the second by one whose name she could not recall, in a town in the interior of Connecticut; the third, by Dr. Norris, of this city. About two months before admission to Bellevue, the pain began again in the same situation, was attended with a chill, fever, and vomiting of dark-colored blood, and the passage of bloody stools. Examination on admission disclosed general abdominal pain and tenderness, attended with fecal vomiting, bloody and mucous stools. Nutrient enemata were given, as she was unable to retain any food by the stomach. At this time it was suspected that she was suffering either from intestinal obstruction, or from a fistulous communication between the large intestine and stomach. Such was her history up to February 26th, at which time she was transferred to the surgical wards, and came under my notice. I examined her almost immediately after admission, and found her with a flat, boat-shaped abdomen, hyperæsthesia, with a normal temperature and a moderately increased heart-action. I was so certain that she had not intestinal obstruction, that I ventured the somewhat cannibalistic remark, "If she have intestinal obstruction, I will eat her." After giving some perfunctory directions to Dr. Wilson, the house surgeon, as to nourishment and the watching for further developments, she was left alone for a time. In the evening of the same date, Dr. Wilson visited my residence and reported that she had vomited a portion of a glycerine enema eighteen seconds after its administration. He also added that, being determined to be sure as to the identity of the vomited matter, that he had given a second enema, which one contained methyl violet, and that portions of this, too, were vomited in fifteen or twenty seconds after administration.

The identity of the coloring matter in this specimen of vomit was confirmed by no less an authority than Mr. Rice, the well-known chemist and pharmacist of Bellevue Hospital. As the expulsion by the mouth of portions of an enema so soon after administration, could not be accounted for rationally at that time except on the theory of the presence of a large fistulous communication between the sigmoid flexure and stomach, or the colon and stomach, directions were then given to prepare the patient for an operation to be done on the following day. It is proper to say now that the small size of the enema (three or four ounces), and the distance from the rectum to the stomach, taken in connection with the large size of the bowel conveying the fluid, did direct my attention to the fact of the strange inconsistency of its rapid expulsion by the mouth under these conditions. However, logic was not permitted to interfere long with action in this case, especially as the patient herself urgently requested an operation. On the following day the abdomen was opened in the median line, in the course of the incisions previously made by the other explorers, to which incision was added another passing through the left rectus at a right angle with preceding. The reason for the latter was to permit a better exposure of the stomach and transverse colon. On drawing aside the flaps the following conditions were easily determined: 1. General intestinal adhesions throughout the upper two-thirds of the abdominal cavity, so complete, in fact, as to practically obliterate the cavity in the immediate neighborhood of the operation. 2. The transverse colon in close contact with the greater curvature of the stomach, to which it was connected by old adhesions and shrunken omentum. Neither careful inspection nor manipulation disclosed the presence of a fistulous communication between the stomach and any portion of the intestinal tract, and the sigmoid flexure was found in the usual situation, and consequently far removed from the stomach. The tissues binding the stomach and transverse colon to each other were then carefully sundered, except the shrunken and distorted omentum, which was with difficulty turned upward at this situation, after division, between suitable ligatures. No evidences whatever of the presence of any intercommunication with the stomach rewarded this careful search, even after the stomach had been entirely separated from the contiguous intestinal surroundings. Still being anxious to interrogate the inner surface of the stomach, and also to examine as to the nature of its contents, a two-inch incision was made into it at the anterior surface, near the pyloric extremity. The introduction of

[1] International Clinics.

[2] Read before the Practitioners' Society, December 2, 1892.

the finger, the sponge, the douche, and the electric light disclosed nothing unnatural as to the physical characteristics or contents of the organ. The previous suspicions that had been entertained as to the possibility of counterfeit manifestations on the part of the patient were now promptly substituted by firm conviction of their spurious nature, and emphasized by wonder as how it all had been done. However, in order that all resources should be exhausted to detect the absence of integrity of the intestine, a large injection of a solution of pyoktanin was administered, with the transverse colon *in situ*. The colon was completely distended with the solution, beyond a doubt, since the characteristic color of the fluid could be easily discerned through the wall of the colon itself. During the introduction of this injection the left index-finger was placed in the pyloric valve, effectually closing it. This was done to demonstrate, in case of the fluid's appearance, whether or not it entered the stomach directly, or indirectly by way of the duodenum. But, as can now be foreseen by everyone, it did not enter at all. Consequently the incisions of the stomach and abdomen were closed in the usual manner, and the patient taken to the ward to await further developments.

She did perfectly well and nothing unusual appeared until March 12th, when a small amount of fluid fecal matter was noticed escaping through the ulcerating junction of the two abdominal incisions already mentioned. The fact was reserved for mention at this time, that, during the presence of the colored fluid in the transverse colon, the appearance of unusual thinness of the wall in an isolated part of the anterior border was commented on, and the fear expressed that it might slough there; therefore the wound in the abdominal wall opposite this point was closed only with an iodoform tamponade. From March 12th to April 28th the patient did well in all other respects than those referable to the fecal fistula; which now permitted the escape of nearly all of the intestinal dejecta. However, the patient improved in temperament and physical appearance during the time. On April 20th she again developed hysterical manifestations of no uncertain nature, such as great nervous excitement, attended with violent crying and complete ptosis. These symptoms continued with more or less interruption until May 9th, when she complained of great abdominal pain, continuous retching, attended with fecal vomiting. For the ensuing six days she was nourished entirely by the bowel. On the first of these days (May 10th) the vomited matter had the odor of whiskey, and possessed other characteristics strongly suggestive of the nature of the nutritious enemata that were being administered every four hours. On May 12th, at 5 P.M., her temperature was normal by the mouth, while by the rectum it was 113° F., as determined by Dr. Hubbard, the then house surgeon, after five trials with as many different thermometers, which were pronounced correct by Mr. Rice. On the following day (May 13th) the rectal temperature was 108° F., by a standard Hicks thermometer, while the axillary temperature was normal. On the same day the sphincter ani was dilated and a thermometer carried high into the bowel, with the result of registering 99°. From this time on the temperature was normal in all respects. During the six days of rectal alimentation, continuous fecal vomiting, and the occasional high temperature by the rectum, the patient's general condition, pulse, and the temperature elsewhere than in the bowel was normal, and for this reason it was believed that food was obtained in some surreptitious manner by the patient. As she still continued the vomiting of matters resembling the enemata, an enema of eosin solution flavored with the oil of cloves was given by the then house surgeon, Dr. Hubbard, and fourteen minutes later she expelled by the mouth an ounce of the mixture. Still it was fifteen hours after the giving of this enema before any evidence of it appeared at the fistulous opening in the abdomen. On the following day she was stripped while in bed and removed to the corner of a neighboring ward, there placed in another bed, her hands tied, and a continuous watch placed over her. She was then given as before a solution of methyl blue flavored with oil of cloves. She rebelled vigorously against the confinement as well as the scrutiny then being exercised. Finally she quieted down, and so also did all of her distressing symptoms. No more fecal vomiting occurred, notwithstanding her efforts of retching, which were soon discontinued. However, the enemata were continued as before, with the view of ascertaining if she would complain of hunger now while under their use, as she had not done so before this time. She soon begged for food, which was given her, and the enemata were discontinued. From this time on she made a continuous and prompt recovery, and was soon walking around the ward in fair vigor and good spirit. I requested Dr. Hubbard to exercise his own judgment as to the best manner of finding out how she had so completely deceived the attendants in the final, and presumptively on all previous occasions. After great effort she finally made statements regarding the deceptions which can be summarized as follows:

1. She knew that she was doing wrong, but the impulse to do so was irresistible.

2. That in the first instance (the glycerine enema), she fooled the nurse by removing some of the enema from the rectum with the fingers and placing it in the mouth, then, while being observed, retched and expelled it from the mouth with apparently great effort and suffering.

3. She obtained the methyl-violet while it was in a dish placed on the stand by her bedside, when the nurse was stooping down to place a vessel on the floor. Therefore she had it in her mouth ready for exhibition before the injection was given.

4. During the six days of continuous fecal vomiting, and the phenomenal high temperatures and rectal alimentation (all of which caused no well-marked physical change), she was well fed with milk by a patient of the ward during the absence of the nurse. The fecal supply of the vomit was taken from the abdominal fistula, put in the mouth by herself, and kept there to be expelled while under observation.

5. Portions of the clove-scented eosin solutions used as an enema were removed from the rectum by the patient with her index finger, put in the mouth, and expelled when necessary for the purpose of deception.

6. She refused to account for the high registration of the thermometer, saying "I do not know." But since the temperature of the rectum remained at the normal figure after dilatation of the sphincter ani, the means employed by the patient to cause this exaggerated registration would seem to depend in some manner on friction, incident, perhaps, to alternating rapid contraction and relaxation of the sphincter ani; for surely the sudden change after dilatation cannot be classed as a coincidence. So much referable to the remarkable knowledge and shrewdness displayed by the patient in carrying on the deception. There can be but little doubt of the fact that those who were previously in charge of this patient were led to perform laparotomy upon her because of the presence of simulated obstruction or other phenomena which she then exhibited. Her anxiety to submit to operation in the fourth instance, with the full knowledge of its dangers and failure in her case, and the appreciation that her own impulses were causing the deceptions indicating its performance, lead me to classify her as a "laparotomy fiend" of the highest order.

I will occupy only a few moments more while I call the attention of my surgical friends to some features of surgical interest in this case. A few weeks ago an effort was made by me to close the fistulous opening in the abdominal wall. It was then about one-fourth of an inch in diameter, and led directly into the transverse colon, for the walls of this intestine were adherent to the posterior surface of the abdominal wall. The gut was dissected away from the abdominal wall, the border of the opening in it refreshed, and then closed in the

usual manner. As the result of this procedure, and other influences, the lumen of the intestine was reduced perhaps about one fourth at the seat of sewing. The effort to close it was a failure, due in part, and perhaps entirely, to the fact that the patient inserted her hands beneath the dressing and into the wound soon after the operation, and they were tied to prevent further similar acts. At all events, there still remains an opening, through which a quite free discharge of fecal matter takes place. In conclusion, permit me to submit the following interrogatories :

1. Is a diminution of one-third in the lumen at the seat of closure sufficient to offer a serious obstacle to healing at that point, or to interfere after healing with the proper performance of the intestinal functions ?

2. Will the adhesion to the abdominal wall of not less than four inches of the anterior surface of the colon at the point of closure, either alone or combined with the general intestinal adhesions noted in this case, offer an obstacle well calculated to prevent permanent cure of the fecal fistula, without excision of the adherent portion of the transverse colon ?

3. Was or was not the fecal fistula caused by sloughing of the wall of the colon, itself dependent on an incautious or unavoidable stripping off of the peritoneum at that situation ?

Dr. Bryant also read the following case in the practice of Dr. J. M. Leslie, of Chillicothe, O. :

"In the first year of my practice (1876), S. B—— was sent to me for treatment by Dr. E. J. Galbraith. She was about twenty five years old, unmarried, of German parentage, and American birth. She had light hair, blue eyes, and a sallow complexion ; was illiterate, unsightly, and poor. An abscess of the dorsum of the right hand opened between the metacarpo-phalangeal jomts of the middle- and ring-fingers. After several months of—the then—ordinary treatment, without improvement and without remuneration, I advised her to try someone else, telling her I would have nothing more to do with the case unless the dead bone showed itself, in which case I would remove it for her. (I had suspected dead bone at the bottom of her trouble.) About a week later she came in and told me that she thought that there was a piece of dead bone in her hand. I probed, found, and removed it with dressing-forceps. The next week she came in with another piece of bone to be removed, and the following week with two pieces, and the week after that with three, and so on, the number of pieces increasing from week to week until I removed eleven, the highest number removed at any one sitting.

"Probably the first fifty were thrown away as fast as removed ; those removed later were dropped in a box and saved. The box is now in my possession and contains three hundred fragments of bone, all of which were taken from this same hand. They measure from seven-eighths of an inch to two inches in length, and from one-eighth to one quarter of an inch in width, and were evidently split from the bones of chicken legs which had been boiled. The majority of them are rough, but a few have been whittled down and sharpened at one end to facilitate introduction.

"The bones were always wedged in tightly and the opening partly, sometimes completely, closed over them. To remove them it was necessary to enlarge the opening with a knife, locate the bones with a probe, grasp one of them with a forceps, and make a good, strong pull ; they came away with a grating sound, and were followed by a stream of blood and pus. The bones were always pushed deep into the hand, and well up toward the wrist, and when I cut down on them making a new opening, she pushed them still farther up, or to one side.

"The hand was always very much swollen and distorted, and must have been very painful, yet she was never more delighted than when she had a goodly number of bones to be removed.

"Tiring of her, I finally refused to have anything more to do with the case. I saw her a year or two later, when she told me that about twenty-five bones worked out after I quit the case, and then her hand got well. She always denied putting them in.

"This same patient had previously a number of sound teeth extracted, for no other apparent cause than the pleasure of extraction. She also took pleasure in having epileptic fits on the public highway."

NOTE ON THE USE OF HEART-STIMULANTS, AND PARTICULARLY OF STRYCHNINE, IN THE TREATMENT OF ACUTE LOBAR PNEUMONIA.[1]

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THAT death in a large number of cases of acute lobar pneumonia is directly caused by the exhaustion of the heart which the disease-process produces is generally admitted. It is well known that patients suffering from this malady are very prone to syncope upon slight exertion ; indeed, a number of cases are on record in which sudden death has followed the effort to sit up in bed for the purpose of facilitating the physical examination of the chest. In a considerable number of cases death takes place very suddenly, as it sometimes does in pleurisy with effusion, from syncope not caused by muscular exertion. In still others œdema of the lungs precedes the fatal issue. In all these cases it is the heart-failure which kills. With the causes of this failure we have but little to do in the present paper. It is my desire to speak only of certain clinical phenomena, not to discuss theories

Acute lobar pneumonia is a self-limited disease, which usually terminates by crisis within ten days. In very many cases, sooner or later the heart becomes weak, and in fatal cases death often results from heart-failure. Sometimes the heart-weakness is manifest at the beginning of the disorder, but more often it only becomes evident after the illness has lasted several days. It is very apt to be pronounced about the time the crisis is generally to be expected, and death is very common at this time (*i.e.*, between the sixth and tenth days). The disease is of short duration ; if the heart can be forced to act for a few days recovery may be expected, and there is reason to believe that judicious treatment with cardiac stimulants can save many lives.

The principal stimulants commonly used in pneumonia are alcohol in some form, digitalis, convallaria, and strophanthus, either singly or in combination, caffeine, ammonium carbonate, ether, some of the nitrites, opium, musk, nux vomica.[2] There are, of course, a number of other heart-stimulants ; but the ones mentioned are the most important.

The Indications for Stimulation.—There is, it seems to me, a good deal of difference of opinion as to the indications for exhibiting stimulants. On the whole, are we not apt to use them before the patient's condition demands them ? The principal reason for their administration is their effect upon the circulatory system ; their action upon the rest of the body-machinery is not taken into account. (It will be understood that I speak of the drugs named only as they are employed for the purpose of "stimulation" in the clinical meaning of the word.) There is an idea which has been often set forth, and which is often applied to-day, that it is right to stimulate in all cases where there is reason to expect weakness of the heart to result from some acute disease long before such weakness becomes manifest. Syllogistically expressed in regard to pneumonia, it is : "Heart-weakness

[1] Read at a meeting of the Practitioners' Society, December 2, 1892.

[2] The alkaloids of the various vegetable substances are assumed to be included under the name of the plant producing them

may be expected to result from the disease within from twenty-four hours to ten days; therefore, let us forestall it by immediately giving stimulants, regardless of the present condition of the heart." This is the actual practice of many. It would be as rational to say to an athlete, "You are to be submitted to a severe strain in a short time; you had better take a good deal of liquor." The athlete knows that to take stimulants in order to prepare for some strain upon his muscles which is not imminent, is folly. The heart is a muscle, and to stimulate it needlessly is to exhaust it. The need for stimulation is determined by the actually existing condition of the circulatory system, not by some condition which may obtain in the future. If a patient with pneumonia has a good pulse and shows no evidence of imperfect circulation, it is worse than folly to stimulate.

Concerning Some of the Cardiac Stimulants.—Alcohol administered in wine, liquor, or some other solution, is of the greatest value. It is needless to say more about it than has already been said, namely, that it is not well to give it without definite reason. In regard to digitalis, strophanthus, and convallaria, I can only say that I have never seen a single case of pneumonia in which benefit seemed to result from their use. This may be because of my limited experience, but it is a fact. Opium and morphine have both seemed to be of distinct value as stimulants in a number of my cases. Passing over the other drugs, I wish to call attention to strychnine as a cardiac stimulant.

Strychnine has been in use for this purpose for a long time. I have not been able to learn who first recommended it. Its value does not seem to have been appreciated by the majority of the profession. While I do not pretend that it is capable of producing marvellous effects, I think it has a value which should not be overlooked. Especially is this so in patients in whom alcohol is powerless, as in old drunkards. It has seemed to me to increase the heart's strength in a remarkable way in a number of such cases. It has also seemed a most valuable drug when given in addition to alcohol in suitable cases, since it appears to increase the stimulating effects of the latter.

Administration and Dose of Strychnine.—It must be given in large doses. By far the safest mode of administration is hypodermic. Given in this way each dose exerts its influence promptly, and there is no tendency to cause the so-called "cumulative action." From $\frac{1}{30}$ to $\frac{1}{20}$ grain may be given at a time, and the same or a smaller dose repeated every half-hour, if necessary, until the heart becomes stronger or toxic symptoms begin to appear. The limit of safety may be assumed to have been reached as soon as a distinct exaggeration of the deep reflexes appears. The way I have adopted for demonstrating such an exaggeration is very simple. It is to lift the patient's forearm, the hand being allowed to hang with the extensors relaxed, and to strike the tendon of the supinator longus. If a marked contraction of this muscle occur, it is fair to assume that the reflexes are exaggerated.

Strychnine is what might be called an honest drug, for it gives warning of toxic symptoms long before the latter appear, provided it is used hypodermically. I repeat that I do not wish to claim for it more than a limited range of utility, though I think it may prove as valuable as alcohol for heart stimulation.

The Hospitals of New York City have received quite a shock in the last month, from the order of the Fire Commissioners in regard to a new law, which seems to have been passed when the Legislature was in a state of panic. This law compels even small hospitals to have night watchmen, and, besides that, a very complicated annunciator and gong apparatus, which is likely to be set in motion by some timid patient and wake up the whole house, without any good whatever.—*Post-Graduate.*

THE USE OF ELECTRICITY IN MIDWIFERY.[1]

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MR. PRESIDENT AND FELLOWS: It requires no very great stretch of imagination to fancy the more conservative among you saying to themselves, as they glance at the title of this paper—"I suppose some young enthusiast is going to try and make us believe that electricity is capable of doing almost anything in midwifery, and that our time-honored drugs and instruments must be thrown aside, and our obstetric outfit reduced to a battery and a few electrodes." If there be any such here to-day, let me relieve their mind at once, by stating that it has been the aim of the author to avoid the rosy-hued descriptions so often indulged in by writers upon the medical uses of electricity, and to confine his paper to a concise and scientific statement of some points which his own experience has led him to think may be of practical interest to his fellow-practitioners.

There are many occasions on which the resources of the obstetrician are taxed to the utmost, and our science has not yet become so exact that we can say with certainty that this or that remedy will be the appropriate one for a given case. Even the physician of large experience, who has learned to make the most of what is at hand, cannot afford to ignore any measure, however trivial, which has been found helpful in practice; and it is hoped, therefore, that the value of electricity in midwifery will be judged, not by theory, but by the actual test of experience. It is not an agent which will suit every case, or which can be applied according to mathematical rules; like other therapeutic measures, it frequently fails, but nevertheless, it possesses certain important advantages, which, in the opinion of the writer, entitle it to a permanent place in the recognized resources of obstetric art. Whenever the generic term "electricity" is employed in this article it is to be understood that it refers to faradization, as this form of electricity is by far the most useful, as well as the most convenient, for our purpose.

For convenience in description, its more important uses may be considered under three heads, viz.: I. Its sedative action. II. Its oxytocic action. III. Its power to prevent, and to control, uterine hemorrhage. To avoid needless repetition, these three principal actions of electricity will be considered first; then a few cases will be cited, which have been selected for the purpose of showing where electricity has been of service, and where it has failed; and finally, the method of its application will be considered,

I. Its Sedative Action.—Happily, public opinion no longer considers it improper to attempt to relieve the sufferings of the parturient woman, and those physicians who still persist in withholding remedies which are known to mitigate the pangs of child-birth, do so, not because they believe that woman is doomed "in sorrow to bring forth children," but from a deep conviction that the administration of such drugs is not for the best good of their patients. At our last meeting, I took occasion to express myself as heartily in favor of the judicious administration of chloroform in most cases of labor, but I recognize that chloroform has some disadvantages, and I am sure that all of us would gladly welcome any agent which, while exerting a marked sedative effect, would not interfere with the progress of labor, or tend to produce post-partum hemorrhage. Such an agent is to be found in the faradic current of electricity, but you will be disappointed if you expect it to exhibit this action in every case. I regret very much that my own experience with faradization does not permit me to endorse the claims made for it by Dr. W. T. Baird, of Texas. In an article written by him, and published in the *American Journal of Obstetrics* in 1885, he says that the suffering can be as ef-

[1] Read before the New York State Medical Association, November 17, 1892.

fectively relieved in the painful parts "as we would dare to relieve it with anæsthetics, *for any great length of time*," and adds that he has never known of a case in which it has failed to give all the relief demanded by the patient. This is pretty strong language, and is only applicable to some of the more striking cases which have come under my observation. In his experience with electricity in midwifery the writer has met with the same uncertainties and disappointments which characterize the action of other remedies, and he has thus far been unable to formulate rules which would be of much assistance in determining which cases are most appropriate for its use. In saying this, however, he does not wish to be understood as implying that it is more difficult of application than such remedies as chloroform, morphine, and chloral, but only that in this field, as elsewhere in medicine, empiricism must play an important part.

But, you ask, what are the special advantages; then, of electricity over other remedies? In the first place, it is useful where chloral or morphine is contra-indicated on account of idiosyncrasy or debility, or where it is not considered prudent to push these drugs any further. It is also available where the stomach is too irritable to retain medicine, and where it is inconvenient or impracticable to resort to rectal administration. Faradization, unlike morphine or chloroform, does not interfere with the progress of labor by stopping "the pains," but, on the contrary, excites more powerful and efficient uterine contractions, at the same time that it quiets the general nervous irritability. It also possesses the distinct advantage of not favoring uterine relaxation and hemorrhage, and its use, therefore, does not complicate subsequent operative procedures under anæsthesia, should these be demanded.

The manner in which the faradic current produces sedation has long been a fruitful subject for speculation, yet up to the present time but little is definitely known about it. The older writers compared its action on the nerves to that of counter-irritants upon disease processes; or, in other words, they claimed that by producing a profound impression upon the nerves of sensation it prevented them, for the time being, from transmitting the sensation of pain. More recently we have been told that it probably causes anæsthesia by producing a sort of rapid inward percussion upon the nerves. That the number of vibrations of the current has much to do with its anæsthetic effect, has been admirably shown in a recent paper, read by Dr. William F. Hutchinson, of Providence, before the American Electro-therapeutic Association. He has had constructed an induction apparatus, in which the usual spring vibrator has been replaced by a metallic ribbon, which may be readily adjusted to vibrate in unison with any desired note, and his experiments upon the human subject with the current from this apparatus, have brought out the remarkable fact, that when this ribbon sounds the note of C major, or is vibrating about thirty thousand times per minute, the maximum anæsthetic effect is obtained. So marked was the anæsthesia that he was enabled, in one instance, to open a felon without causing the patient any pain whatever. I mention these experiments, not only because they throw some light on the action of the faradic current upon the sensory nerves, but because they show plainly that we cannot expect to obtain this exceedingly useful effect of the current from every little induction apparatus which we may happen to employ.

II. **Its Oxytocic Action.**—If there be one action of electricity more certain than another, it is its power to evoke and stimulate uterine contractions; hence, in every case of tedious labor in which the delay is due to feeble or infrequent contractions of the uterus, or where, owing to slight disproportion between the fœtal and maternal parts, unusual muscular exertion is required to deliver the child, faradization is indicated, and will usually render efficient aid. Not infrequently the exhibition of its sedative action is immediately followed by a distinct advance, thus showing that in practice its sedative and oxytocic actions cannot always be separated. In persons of sensitive temperamenta slight benumbing effect, whether produced by drugs or by faradization, is sufficient to encourage the patient to "bear down" more vigorously, and so make better use of the "pains" of the second stage. One of the most beneficent properties of electricity is exhibited in what may be termed its "steadying effect" on "the pains," by which is meant that the uterine contractions, when severe and almost incessant, are made less frequent and more efficient. It is just here that one appreciates the importance of that rest which is afforded the uterus, when the contractions are of the regular, rhythmical type seen in a perfectly normal labor.

Notwithstanding all that has been written and said against the danger of administering ergot to hasten labor, there are not a few practitioners who persist in this practice. To these physicians, as well as to those who are often sorely tempted to use it in this way, but who have moral courage enough to refrain, I would recommend a trial of faradization. The action of ergot is slow, and uncertain in degree, faradization produces its effect instantaneously, and the amount can be accurately gauged; ergot exerts its influence for a variable length of time, which is entirely beyond control, faradization acts upon the uterus for just so long a period as the operator desires—it can be instantly checked, and as quickly resumed; ergot produces a tonic cramp of the uterine muscle, which unnecessarily exhausts the mother, and is dangerous both to her and to the child, faradization produces a steady, rhythmical contraction of the uterus, which allows a proper interval of rest to the uterine muscle, and closely imitates Nature's method. In no class of obstetric cases does electricity possess such signal advantages over other and better known measures as in that in which a safe, speedy, and certain oxytocic agent is indicated. I say "indicated," because there are many cases, besides those due to simple inertia of the uterus, in which such an agent is desirable. Thus there is often a slight narrowing of the pelvis, or the fœtal head is unusually large, or is abnormally ossified, causing a tedious labor, and yet, at the commencement, it is impossible to say whether or not delivery can be safely effected without instrumental aid. Under such circumstances, it is true conservatism to make an effort to accomplish delivery without resorting to instruments, or to an operation, and this is especially so, when that effort does not involve any additional risk. No evidence has yet been brought forward to show that electricity, as ordinarily applied, is harmful, either to mother or child, so that one has nothing to lose, and everything to gain, from a trial of its oxytocic properties.

Faradization is likely to prove very useful in those occasional cases in which the induction of labor becomes imperative. On account of the comparative rarity of this procedure, only one such case has come under my personal observation, in which this agent was so employed; but in this instance, its action was so admirable, as to place it far in advance of the methods usually recommended. In cases of inevitable abortion and miscarriage it is also an extremely valuable agent; but this will be again referred to in considering its action in the third stage of labor.

III. **Its Power to Prevent, and to Control Uterine Hemorrhage.**—Under this head will be considered more particularly its usefulness in the third stage of labor. As in all cases where uterine inertia already exists, or is likely to be present, there is danger of hemorrhage in the third stage, the indication is to employ such treatment as will place the uterus in the best possible condition to prevent such a mishap. The usual practice is to do little more, in the way of prophylaxis, than to guard against undue exhaustion of the patient, and to avoid emptying the uterus too rapidly. The best authorities advise against the use of ergot until it is certain that the second stage of labor will be completed within a very few minutes, and

many prefer waiting until the child is delivered before administering this remedy. The writer prefers the latter plan, and is of the opinion that the giving of ergot a short time before delivery is often responsible for difficulty in removing the placenta. This objection does not apply to the use of electricity, for, as has been already stated, the contractions of the uterus which it produces, are entirely under the control of the operator. Among the more common causes predisposing to post-partum hemorrhage may be mentioned rapid emptying of the uterus, and the use of chloroform to the point of producing profound anæsthesia. Where there is imperfect contraction of the uterus after the delivery of the placenta, or where post-partum hemorrhage is imminent, or is actually present, faradization is very useful, and when the hemorrhage is not excessive, may be all that is required. I do not wish to be understood as advocating its use in the face of an alarming hemorrhage, to the exclusion of well recognized methods of treatment, for this might mean the loss of valuable time and, perhaps, even of a life; but, if the electrical apparatus be in readiness beforehand, as it should be, it will be found a valuable adjuvant to other methods, just as a hypodermic injection of ergot may give temporary aid, after the obstetrician has removed any portions which may have been retained in the uterus, and when, perhaps, a few precious moments would otherwise be lost while hot water for a douche was being brought to the bedside, or its temperature was being adjusted.

Electricity is also useful in aiding the expulsion of the placenta. Most obstetricians will be able to recall cases in which, owing probably to fat abdominal walls, or still more commonly to distention of the bowels with gas, the placenta has been delivered only after considerable manipulation, which has left the abdomen sore and tender. By calling electricity to our aid we shall be able, in most cases, to expel the placenta with scarcely any manipulation of the abdomen, and with a trifling loss of blood.

Analogous to the assistance rendered by electricity in the third stage of labor, is its action in cases of abortion. Here it may be resorted to with good effect, saving much time and annoyance, both to patient and physician, by doing away with the necessity for prolonged manipulations, and so diminishing both the dangers and the discomforts attendant upon such accidents. For instance, in those cases of early abortion occurring in women in whom the cervix is high and the ostium vaginæ quite small, it need hardly be said that the removal of the contents of the uterus is often attended with much difficulty; yet it is just under such conditions that faradization does yeoman service, for it not only causes the expulsion of the contents of the uterus, but also guards against one of the most common complications, *i.e.*, hemorrhage.

From what has already been said, one would very naturally and properly infer that electricity would be useful in cases of subinvolution, and while this is true the limits of this paper prevent a consideration of this and such kindred subjects, as the use of faradization to stimulate the secretion of milk, or for the relief of the vomiting of pregnancy.

It has been the object of the writer, thus far, to give a general idea of what may be expected from faradic electricity in obstetrical practice. It remains now to consider briefly a few illustrative cases, and then take up some practical points regarding the technique of its application.

As some of the following cases were observed in hospital practice jointly by Dr. Irwin H. Hance and myself I am indebted to him for some of the clinical notes.

Case I. *A Good Sedative and Oxytocic; Prompt Control of Post partum Hemorrhage after Forceps Delivery.*—I-para; twenty-eight years of age. The first stage lasted twenty-one hours, and the pains were fifteen or twenty minutes apart. At the beginning of the second stage faradization was begun, and was kept up almost continuously for forty minutes. The pains were then more vigorous, and came on about every five minutes, yet the electricity produced a marked sedative effect, which was commented upon both by the patient and the nurse, although I had been careful to refrain from saying anything about the severity of the pain. The current was then applied for some little time longer, but only during the pains, which became somewhat less frequent again, but still quite strong. The head was obstructed at the pelvic floor, and after waiting a considerable time, the forceps were applied under full chloroform narcosis, and delivery effected in twenty five minutes. The tonic contraction of the uterus was not very good after the delivery of the placenta, and there was a small gush of blood, which was instantaneously checked by the application of the electrode.

Case II. *A Good Sedative and Oxytocic.*—II-para; twenty-two years of age. The first stage was characterized by almost constant nagging pains, and after some hours, although the patient was quite plucky, she became very nervous, and her pulse rose to 120 beats per minute. At the time of beginning the faradization the os was about two and a half inches in diameter, thick, and unyielding, and the head of the child was quite high in the pelvis. In from three to five minutes, it was evident that the patient was suffering much less, although the uterine contractions were frequent, short, and sharp. In a few minutes more the os was fully dilated, and the head on the perineum, and the child was delivered in half an hour. The electricity was applied at intervals during this period until just before the delivery of the head. The patient had become quite calm, her pulse had been reduced to 104, and was of better quality, and the uterine contractions were much more regular and effective.

Case III. *A Good Sedative and Oxytocic; Useful in the Third Stage; Effect of Varying the Interruptions in the Current.*—I-para; twenty five years of age; a large and strongly built woman. The dilatation of the os was very slow, so that thirty-six hours after the first pains began it was only about two inches in diameter. Seven hours later, notwithstanding the use of several hot vaginal douches, and the evacuation of considerable liquor amnii, the os was not much larger, and the pains were irregular, short, and inefficient. The full strength of the current from a large faradic battery was then applied in the usual way, and after about fifteen minutes of almost continuous application, the pains had become more regular and frequent, and had increased in severity, yet the patient was much quieter, and expressed herself as experiencing much less pain. The application of the current lasted for half an hour. After this, the progress was more decided, and the os was fully dilated in a little less than four hours. There was slight obstruction to the descent of the head in the pelvis, so the forceps were applied, and the head soon delivered by gentle intermittent traction. There was some little difficulty in delivering the placenta, and its expulsion was followed by more than the usual amount of bleeding, and although this was checked by ergot and hot douches, the uterus remained flabby. The faradic current was again applied for about five minutes, with the result of causing a firmer contraction of the uterus and preventing further hemorrhage.

In this case it was found that the most work could be obtained from the current with the least inconvenience to the patient, by adjusting the contact-breaker so as to make very fine interruptions in the current during the intervals of the pains, and changing to coarse interruptions as soon as the uterus began to contract.

Case IV. *Prolonged First Stage from Rigid Os; Faradization Fails Both as an Oxytocic and a Sedative; Chloral Succeeds.*—I-para; twenty-one years of age. She had pains at short intervals for four days before any dilatation of the os was evident. When the os had reached two inches in diameter there was scarcely any further progress. The uterine contractions occurred every three minutes, and were very strong, but with each pain the os would dilate to nearly the full size, and then contract to

its former size when the pain subsided. During the night the patient received three hot vaginal douches and thirty grains of chloral, but with little benefit. A strong faradic current was then applied, almost continuously for fifteen minutes, and then only during the pains for fifteen minutes more. The uterine contractions then became very severe, and recurred every two minutes, but there was no advance and no sedation, and the faradization seemed to cause so much discomfort that it was stopped. During the next four hours the patient received three hot vaginal douches, and thirty grains more of chloral. She then came pretty well under the influence of the drug, and at the same time it was noted that the child's head was lower, and that the cervix was receding. The progress of the labor from this point was uninterrupted, and the child was born two hours later.

This case is worthy of special notice, not only because of the failure of electricity to accomplish good results under conditions which seemed theoretically to be peculiarly appropriate for its use, but because it also shows that the writer does not wish to convey the impression that electricity will accomplish wonders in every case. Contrast this case with the following:

Case V. *Good Oxytocic Action and some Sedation; Chloral Fails.*—I-para, twenty-eight years of age. The first stage was quite slow, the os being only about one inch in diameter at the end of twenty two hours. The cervix was thin for a long time before the os dilated, and the head was low down in the pelvis, but the pains were not very strong. Chloral failed to assist the dilatation. The faradic current was applied continuously for twenty minutes, and produced some sedation. The second stage began fifteen minutes later, and was completed in half an hour.

Case VI. *Marked Sedation, although no Effect upon the Os; Pelvic Contraction; Forceps Delivery.*—I-para, twenty-five years of age. After being in the first stage for twenty-four hours, suffering severely, it was found that the os was only about two inches in diameter, and its margins quite thick. There were severe uterine contractions every five minutes, and hot douches and morphine had given no relief. Faradization was employed continuously for thirty minutes, with the effect of producing more efficient uterine contractions at longer intervals, and causing the entire disappearance of the nagging pains in the back and hypogastric region. After the second stage was reached it became evident that the mother would require assistance, so the forceps were applied, and delivery effected.

This case is presented in order to show that even in the presence of pelvic deformity, relief from pain may be obtained by the use of electricity, when morphine in appropriate doses has failed. In view of the fact that, in such cases, it is probable that an operation under an anæsthetic will ultimately be required, it is obvious that it is safer to apply electricity than to administer chloral or chloroform.

Case VII. *Induction of Labor in Fifteen Minutes, by Faradization.*—This patient, a primipara, thirty-one years of age, with a decidedly phthisical family history, had suffered, for a long time previous to her pregnancy, from gastritis, and had been further debilitated during pregnancy by persistent nausea and vomiting. After her admission to the hospital she rejected all stimulants and food, with the exception of a little milk and carbonic acid water. In view of her wretched and somewhat precarious condition, it was decided, after consultation, that as the computed time of her confinement had arrived, it was not advisable to wait any longer, and that labor should be at once induced. On the day she had expected to be sick there were no uterine contractions, and no indications of the onset of labor; the os only just admitted the tip of the finger, the vertex presented in the L. O. A. position, and the fœtal heart was beating strongly. The ptient was very weak and excessively nervous and apprehensive. The electrodes were applied in the usual manner over the sacrum and abdomen, and the strength of the faradic current adjusted so as to be slightly disagreeable, but not painful. While the current was being applied Dr. Hance attempted digital divulsion of the os. The first uterine contraction occurred four minutes after applying the current, and several others followed in rapid succession. At the end of twelve minutes from the beginning of the application the os had dilated sufficiently to admit two fingers. Faradization was then stopped for a few minutes. In twenty five minutes from the beginning of the séance the os admitted three fingers, and was quite dilatable, and the pains were returning regularly at intervals of three or four minutes. In the next twenty-five minutes the current was applied only during the uterine contractions. The pains were now only two minutes apart, the mother was much more composed, and her pulse was 68, regular, and fairly good. Labor being now well established faradization was discontinued. The first stage lasted four hours and the second only thirty minutes.

Case VIII. *Expulsion of the Placenta by Electricity; Less than the Usual Bleeding.*—I-para, twenty-one years of age. The faradic current was applied only during the pains near the termination of the second stage, and was then omitted for about five minutes, until the umbilical cord had been ligated. On again closing the circuit the uterus promptly contracted, and in a moment the placenta was forced into the vagina. Although chloroform had been administered sparingly during the last few expulsive pains, the delivery was attended with practically no hemorrhage. About three years later I attended the same lady in confinement with her second child. The first and second stages together only occupied a little over two hours, chloroform was given in the same way during the last fifteen minutes of the second stage, and faradization was not employed at all. There was considerable more blood lost than at her first confinement, when the electricity was used, but the amount still did not exceed that found in many normal deliveries.

Case IX. *Hour-glass Contraction; Adherent Placenta; Faradization Fails.*—III-para, thirty-three years of age. After applying the current for a reasonable time, it was found that the expulsion of the placenta was hindered by a contracted ring in the lower segment of the uterus, and also by the placenta itself being adherent. An examination of the placenta after delivery showed its cotyledons to be unusually large and soft. No ergot had been administered.

Case X. *Placenta Expelled; Immediate Arrest of a Slight Post-partum Hemorrhage.*—I-para, twenty-five years of age. An application of the faradic current in the usual way caused the prompt expulsion of the placenta from the uterus into the vagina, and then very gentle downward pressure with the electrode, resulted in the placenta being immediately forced outside of the vulva. Just after stopping the current there were a few gushes of blood from the uterus, but this hemorrhage ceased immediately on closing the circuit again, and after a few minutes the uterus remained firmly contracted without artificial aid.

The foregoing cases are representative ones, and have been selected with the object of showing what electricity can do, and what it cannot do, in the practice of midwifery. Looking over those cases of which I have preserved careful notes, and in which electricity has been employed with a specific object in view, I find that in 12 cases in which faradization was employed for its sedative and oxytocic effects its sedative action was shown in 8 and its oxytocic action in 9 cases. In 20 out of 27 cases in which it was employed in the third stage of labor it materially aided the expulsion of the placenta, and in 3 out of 4 cases of *moderate* bleeding, occurring immediately after delivery, it promptly checked the flow, and produced firm uterine contraction.

No doubt, by this time, some of you have been thinking that this employment of electricity in midwifery is

pretty in theory, and perhaps useful in hospital practice, or where there are more facilities for using electrical apparatus than ordinarily fall to the lot of the general practitioner, but that it is of very doubtful application to the everyday routine of practice. I hope to show that such is not the case, and that the effects described in this paper may be obtained without the use of any elaborate, expensive, or cumbersome apparatus. I find no objection to the treatment on the part of the patients or their friends; on the contrary, they are gratified at the effort the physician makes to relieve the suffering, and are not slow to compare this practice with the more common one of sitting at the bedside and turning a deaf ear to the patient's pleadings. Do not misunderstand me on this point. I am no advocate of "meddlesome midwifery," but I do believe that the accoucheur should stand ever ready to assuage the sufferings of child-birth, whenever this can be done with safety to the mother and child, and while leaving much to Nature, he should be constantly on the alert to see when art can aid her. If, in a severe and prolonged case of labor, we can safely reduce the patient's sufferings and conserve her failing strength, by causing the pains to come at longer intervals, and then to do more efficient work, it is certainly our duty to do so. Chloral, we know, will accomplish much under such circumstances, but let us not forget that electricity may do as much, or more, and with even less risk to our patients.

The needful appliances are, a portable faradic battery, two or three electrodes, and the necessary conducting cords. It is all-important that the battery should be so constructed as to require very little attention while in operation, and also when not in use. It is desirable that the contact-breaker should be capable of nice adjustment, so that the current may be "made" and "broken" evenly; and just here I would say that it would be a great advantage to the obstetrician to have the usual contact-breaker replaced by the new "singing rheotome" which Dr. Hutchinson has devised for the purpose of making very rapid vibrations. This instrument, as I have already said, has only just been brought to the notice of the medical profession, but I feel quite confident that, had I had it at the time I was attending the cases described in this paper, the sedative effects of the current would have been still more remarkable. As, in a general way, it may be said that a current from a coil of coarse wire is the most appropriate for stimulating muscular fibre to contraction, and that from a fine wire coil most suitable for producing sedation, it is desirable to have the faradic apparatus provided with such coils. Where, however, one desires to have a very small battery, which can be carried in the coat-pocket, or in the obstetric bag, some of these refinements must be sacrificed to portability. A very useful machine of this class is the one known as "The Smith & Shaw Closed Cell Battery." It is not nearly so dirty and wasteful as the well-known Gaiffe pocket battery, and is in every respect a much more efficient instrument. The current is sufficient for most cases, but even the coil with two cells of battery is, in exceptional cases, hardly strong enough. It can be carried about charged, so as to be ready for use at a moment's notice. Each charge is sufficient to run the battery for a number of hours, and its renewal is quickly and easily effected.

The best method of applying the current to the patient, is with the positive pole to the sacro-lumbar region, and the negative pole to the abdomen. Fairly good work can be done with two sponge electrodes applied to the abdomen, on either side of the uterus, but this method is not so convenient or so effective as the one first described. The only precaution necessary in regard to the position of the electrodes is to place them so that the current will not pass through the head of the child. The method described will avoid such a danger in vertex cases, but where the breech presents, it is better to apply one pole to the sacro-lumbar region and the other to the nape of the neck.

For the lumbar electrode I use a small copper plate to which is attached the conducting cord from the positive pole of the faradic machine. The portion of the cord near the plate should be covered with rubber tubing, so that it may be easily cleaned. When the electrode is to be applied, it is laid upon a strip of roller bandage, and a thin sheet of wet absorbent cotton is wrapped around both the plate and bandage. The bandage is then fastened around the patient like a belt, and serves to retain the electrode in contact with the skin, and in proper position, even though the patient be rolling about the bed. It matters not if the electrode be soiled with the discharges, for the rubber covered cord and the copper plate are easily cleaned, and fresh absorbent cotton and bandage are used for each case. Unless very powerful currents are required, the best abdominal electrode is the operator's hand, as he is kept constantly informed concerning the strength of the current, and, more important than all, he can keep the uterus in his grasp. This will be particularly appreciated by anyone using faradization in the third stage of labor, for with an ordinary sponge electrode it is a very easy matter for the uterus to relax and escape around one or the other side of the electrode. Where the hand is used, the operator takes an ordinary sponge electrode in one hand, while the other is applied to the abdomen, or the conducting cord from the negative pole is connected to a metal band fastened to his wrist. The objections to this method of application are the weariness it produces in the operator's hand and arm, and the fact that if the current be sufficiently strong to be effective, it is very disagreeable to some persons, who are especially susceptible to its influence. The best substitute for the hand is a flat sponge, insulated at the back with a piece of sheet rubber. In selecting such an electrode, it is important to see that the back is very flexible. Another method is to connect the negative cord with a small metal ball which is placed in the centre of a large sponge. The operator can then grasp the sponge with the naked hand, or can protect his hand with a rubber glove.

Before beginning the application, one should always be careful to see that both electrodes are well wetted with warm water, that the strength of the current is reduced to the minimum, that the contact-breaker is adjusted to work smoothly, and that the current is turned off from the electrodes. Both electrodes are then placed in position, the current turned on, and its strength very gradually increased until it is distinctly perceptible to the patient, but causes no pain. The circuit should be kept closed for ten or fifteen minutes, when the sedative effect should be evident. When this is once obtained, it is only necessary to keep the circuit closed during the pains. When used for its oxytocic effect, the current should be strong enough to be disagreeable, without being decidedly painful, and should be applied intermittently, in imitation of the normal rhythmical contractions of the uterus. When it is desired to employ electricity in the third stage of labor, to facilitate the delivery of the placenta, and to encourage firm uterine contraction, the circuit should be closed as soon as the child is delivered, and a mild current applied to the uterus. Unless it is evident that this will cause the expulsion of the placenta prematurely, the current need not be broken. If the uterine contraction be sluggish, the strength of the current should be rapidly increased, when there will usually be a sudden and powerful contraction, sufficient to expel the placenta. It must be remembered that adipose tissue is a very poor conductor of electricity, and that, therefore, in women with fat abdominal walls the results are likely to be very disappointing, unless powerful currents are employed.

To recapitulate: 1. The necessary apparatus is neither complicated nor troublesome. 2. The application of electricity in cases of midwifery requires no special technical skill, and is, therefore, applicable to the needs of the general practitioner. 3. Electricity exhibits its sedative

effect in parturition sufficiently often to make it worthy of trial where the physician is reluctant to administer chloral or chloroform. 4. Electricity assists labor by increasing the force and efficiency of the natural uterine contractions; it is prompt and reliable, and is entirely under the control of the operator. 5. The use of electricity in the third stage of labor aids the expulsion of the placenta, and diminishes the risk of hemorrhage.

In conclusion, the writer ventures to express the belief that every physician who may be induced to give electricity a fair trial in his obstetric practice will find in it a valuable ally, but one which no more deserves to be considered infallible than do the other remedial agents at our command.

210 WEST 135TH STREET.

HEMIANÆSTHESIA IN FATHER AND DAUGHTER.[1]

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SINCE Charcot, with his faculty for close observation, first placed the subject of hysteria in a new light a numerous body of scientific men have discovered facts upon facts, some of greater, some of less interest. Many of the ideas which had hitherto been held on this subject were found to be untenable, while others were altered, so as to be in accord with the principles of modern psychological thought. Permit me, gentlemen, to present to you the case of a fireman, forty years of age, and his daughter, nine years of age, who are suffering at the same time from hysterical hemianæsthesia, as a slight contribution to the vast subject of hysteria.

The opinion of Lasègue, that hysterical hemianæsthesia is a sympton which must be searched for; and that of Richer, which he expresses in the words "Beaucoup sont anæsthétiques sans le savoir," were confirmed in this case. It was only as an attendant of his sick daughter that the father came to the policlinic, and it was only the accidental examination of his person that led to the discovery of the existence of this strange symptom in him. Before demonstrating this hemianæsthesia I will relate some important facts in the family history.

The father of the patient and the grandfather of the little child, an instrument-maker, was occupied a great deal with metals, as brass, lead, copper, was an excessive drinker, and was always a very nervous man. He made one unsuccessful attempt at suicide, and died from apoplexia cerebri. A younger sister was affected in her youth with convulsions, and suffers now from a nervous irritability, which is increased by the depressing consciousness of a bodily deformity. A younger brother of this girl is a stutterer.

When tested with the brush, there is seen to be an anæsthesia of the left side of the body, sharply defined at the median line. At the same time there is an anæsthesia of the organs of special senses on the same side, so that the patients do not taste with the left side of the tongue, nor smell with the left side of the nose. In addition to this the father has a well-marked concentric narrowing of the field of vision for white and colors in the left eye, and shows the "Förster'schen Verschiebungstypus" in an exquisite manner. In the girl, the acuteness of hearing is diminished, so that whispering is heard only at a distance of one metre from the ear.

If I prick the patient with a pin, or even transfix a fold of the skin, there is no exclamation of pain. The same can be shown in a more convincing manner by the use of "Goldscheider's" method. If the faradic brush is placed in the median line of the body in such a manner that one half is on the sentient side, the other half on the non-sentient side, and the current is allowed to pass through the brush, its strength being gradually increased, the patient suffers severe pain. If now that part of the brush which is in contact with the sentient side be raised, all the pain immediately ceases, although the strength of current is the same and its density is increased.

This symptom of hemianæsthesia, which, according to Charcot, is almost pathognomonic, with involvement of the special senses, would suffice for a determination of the character of the trouble, but there are other symptoms present which add weight to the diagnosis.

The subjective symptoms of the older patient consist in drawing pains, which pass from the calves of the legs to the shoulders, weakness and tremor of the legs, anxiety, irritability, susceptibility of being easily frightened, and insomnia.

The change in the condition of the patient when he passes from a sitting to a recumbent position, is very noticeable. At first he hesitates, his face becomes red, his pulse rate increases from 80 to 138. The slight tremor rapidly increases to clonic convulsions, which in turn pass into a tonic spasm of the muscles, involving all the muscles of the lower extremities. Both active and passive movements of the extremities are impossible when the patient is in this condition. There is also noticed an irregular contraction of the left trapezoides, as a result of which the head is continually drawn backward and toward the shoulder.

If nothing were done to relieve the clonic convulsion of the muscles a considerable period of time would elapse before it would cease spontaneously, but it is by no means difficult to effect this cessation by psychical influence, especially by hypnotism combined with suggestion. The simple momentary fixation of my finger is sufficient to put the patient into a sleeping condition, during which all painful contraction of the muscles immediately ceases. Suggestion during the hypnotic state produces a marked improvement in the condition of the patient, which persists for a considerable period after the hypnotic state has passed away. The reflexes are increased, and "hysterogenic zones" are not to be found.

The nine-year-old daughter of this patient, although anæmic in appearance, enjoys the best of health. Besides the complete hemianæsthesia previously demonstrated, the patient frequently passes into a cataleptic state, in which condition she is always brought to the policlinic. In this state her body is perfectly rigid, consciousness is retained, the movements of the eyes are perfect, the pupillary reaction is prompt, and the corneal and conjunctival reflexes are present. On elevating the patient the trunk is seen to be perfectly rigid. The arms and legs are in a state of hyper-extension and cannot be flexed. The fingers are flexed and closed upon the palm of the hands, and if they are extended they immediately return to their former position. There is no hyperæsthesia of the ovaries, nor is it possible, by pressure in this region, to produce or suppress a cataleptic attack. Neither are there any "hysterogenic zones" to be found.

By the application of the magnet combined with suggestion the cataleptic attack can be suppressed. An aphonia always persists after the cataleptic state has passed away, but this symptom also can be made to disappear by means of new hypnotic suggestion. Once we succeeded in causing the hemianæsthesia to disappear, but it returned in a short time.

Undoubtedly, the common origin of the described hysterical manifestations is to be sought for in the neurasthenic affection of the grandfather. For this, increased by continuous alcoholic excesses and by the pernicious influence of metallic poisons with which he came in contact for many years, tended, no doubt to favor the transmission of a nervous disposition to his offspring. This hereditary taint exerted its strongest influence on the older patient, the first child of the marriage, in whom a typical hysteria has been developed, whereas the second child, the sister of our patient, was only affected by convulsions in her childhood, and later in life suffers from nervous irritability, which, however, is fostered and increased by the

[1] Paper read before the Berliner Gesellschaft für Neurologie und Psychiatrie.

depressing consciousness of her bodily deformity (kyphosis).

The typical hysterical convulsions are absent in this first generation, but the spasmodic tremor of the patient, produced by an altered mental condition, and therefore also capable of being acted upon by psychical influence, can be looked upon as a rudimentary compensation.

It is only natural, and easily to be understood, that a child of this neuropathic man, who drank excessively and was also subjected to the influence of metallic poisons, shows the disease of her father in the most exquisite manner, with all its characteristic symptoms and details. It is an established law that the first-born child suffers most from the hereditary taint, which is well exemplified in the present case.

That heredity acts a prominent part in the production of hysteria, that it is the "cause des causes," as Trélat says, is a fact long ago proved. Daily clinical experience teaches us that every word of Déjérine's view in his celebrated work is to be accepted as true. It reads thus:

"L'hystérie peut être considérée comme la plus héréditaire des névroses; elle affecte des relations intimes avec les états névroses et psycho pathologiques; elle peut s'associer, se combiner avec eux; elle peut en être la transformation, ou à son tour se transformer en eux, montrant peut-être mieux que n'importe quelle névrose, la connexion qui la retient à la grande famille névro-pathologique."

Briquet found that among 100 cases 25 were descendants of parents who suffered from functional or organic diseases of the nervous system. Hammond states that among 209 cases, nervous diseases in the mothers, aunts, grandfathers, or other near relations were found 121 times. Bitault observed in 77 of 100 cases of male hysteria "l'hérédité névropathique." Briquet even goes so far as to claim that "half of all hysterical mothers produce hysterical offspring." The same opinion is held by Bernuk, Féré, Déjérine, etc. The last author is of the opinion that l'épilepsie du père semble être pour la fille hystérique ce qu'est l'hystérie de la mère. Charcot's view, based upon a very strict experience, is that the hysteria of the mother has frequently as consequence the hysteria of the son. But he does not mention that the opposite holds equally true.

Déjérine says that neurasthenia and nervousness of the father manifest themselves in the form of hysteria in the daughter. The simultaneous presence of hysteria in father and daughter he seems not to have observed. Our cases are therefore more interesting, because they are the only ones in which hysteria, with all its characteristic symptoms and signs, has been transmitted from the father to the daughter.

That the hemianæsthesia appears in both patients on the left side is in accordance with the degree of frequency with which hemianæsthesia is found to affect especially this side of the body.

Briquet found among 400 cases of hysteria 93 with hemianæsthesia, of which in 70 the left side was affected, in 23 the right side. Bourneville also supports the above observation, finding the left side affected in 23 cases, the right side in 11.

There is no ovarian tenderness in the daughter, and it is impossible either to check by permanent pressure of this region a cataleptic attack, or to produce a new attack. This observation is opposed to Charcot's view, who seems always to have observed ovarian hyperæsthesia and hemianæsthesia in the same case, so that he treats of both of these conditions in the same chapter.

Allow me, gentlemen, to add some few words on the forensic importance of the present cases. It is hardly to be believed, but is nevertheless a fact, that this poor man, whom every physician of even limited experience would regard as "aegrotissimus vir," has been declared upon expert testimony to be a simulator, and has lost all claims to a pension which he had acquired by a seventeen years service.

How it has been possible to raise the suspicion of simulation in view of all these various symptoms, which can have but one meaning, is for me problematical, but Machiavelli says: "There are many who see, a very few who observe."

My sincerest thanks are due to Dr. Oppenheim for permitting me to publish these cases, and also to Dr. Hermann H. Hoppe for his kind assistance in preparing the article for English publication.

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Progress of Medical Science.

Picrotoxine in the Night-sweats of Phthisis.—Dr. d'Amore has published his experience with picrotoxine and atropine in the night-sweats of phthisis. He gives the picrotoxine in granules containing $\frac{1}{160}$ of a grain each. The author reports forty-five cases thus treated. In fifteen advanced cases he gave without success two pills of atropine containing $\frac{1}{6}$ of a grain each daily; in these cases, two to four granules of picrotoxine, continued for several days, relieved the condition very much. In twenty cases, with less pronounced lesions, atropine did well in some and failed in others; but picrotoxine, used for several days, checked the sweating completely. Finally, in ten early cases, the results were equally good from the use of either drug. The writer explains these differences by the cause of the sweating in the several stages of the disorder. In the early stages much of the sweating is due to the action of the secretory nerves, and these are controlled by atropine; later, the sweating is due more to paralysis of the vaso-motors, and as atropine does not act upon these it loses its power, while picrotoxine, which does act upon the vaso motor system, retains its value in the advanced stage.—*Les Nouveaux Remèdes.*

Diarrhœa from Retroflexion.—Dr. Fischel records the case of a woman, aged twenty three, who was seized with violent diarrhœa a few days after recovery from confinement. It commenced regularly between 4 and 7 A.M., preceded by hypogastric pains and a feeling of anxiety. Four or five motions were passed. At the end of three weeks the patient was very emaciated, having lost nearly twenty pounds in weight. No drugs were of service, and rest did no good. Fischel explored the pelvis and discovered retroflexion of the uterus, which to his knowledge had previously lain in its right axis. Following Schauta's directions, the displacement was rectified, and a pessary applied. Next morning the diarrhœa ceased and did not return. Nine months later the pessary became displaced, and the intestinal catarrh returned, but ceased on rectification of the position of the pessary. A year and a half later the pessary was removed with the same result; on its replacement the retroflexion was rectified and the diarrhœa once more ceased.—*Prager Medicinische Wochenschrift.*

A Chlorodyne Drinker died recently in Wales who used to take about five ounces a week of the drug.

MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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A MODERN ASYLUM SUPERINTENDENT'S VIEW OF THE CARE OF THE INSANE.

A PAPER on the "Care of the Insane," by Dr. Richard Dewey, of Kankakee, Ill., presents in a very complete way some of the modern views on the subject which are deserving of consideration. The conclusions reached show a very striking difference in the attitude of the asylum superintendents to-day from what it was ten years ago.

One of the new ideas in asylum construction is that regarding the character of the buildings and their cost. Instead of the old Kirkbride system of a central executive building and many-storied wings for patients, the whole forming a massive, striking, and expensive structure, the modern plan is to construct numerous detached buildings resembling comfortable homes. Here the patients are grouped in accordance with their form of insanity, social condition, etc. The cottage- or colony-plan for the insane has another advantage, that the buildings can be erected at about one-half the expense of the old style. Already there are as many as five thousand insane provided for in the new way. It is safe to say that the new Bloomingdale Asylum building, now in construction at White Plains, will be the last example of the old style of insane asylum.

Dr. Dewey believes that the insane should be in the care of the State rather than the counties, and he advocates an unpaid Board of Commissioners of Lunacy with advisory powers, rather than a paid commissioner with mandatory powers. It has been found in this State that some body or person with State authority has been needed to control properly the numerous private institutions which are started and run purely for commercial purposes, and often with little regard to anything but business interests. If an advisory board were sufficient to prevent abuses in this direction, it would be the best method of supervision. Already a great deal of friction and ill-feeling have been aroused by the exercise of the somewhat arbitrary powers of the present commission. The time will come when an unsalaried supervisory board will be demanded, and will probably do the work of a paid commission.

Dr. Dewey is, we believe, one of the first of asylum superintendents to recommend the appointment of a woman physician on the medical staff of large insane asylums. He makes this recommendation, although he does not "ignore the fact that greatly exaggerated ideas of her possible usefulness have been entertained in many quarters, and that experience has shown that far less was to be expected from local treatment and operative procedure, in certain classes of the female insane, than had at first been supposed."

We have always claimed that when an asylum superintendent found that a woman physician could help him in the medical care of the insane, such a person should be employed. It is the indiscriminate legislating of women into office, on the ground of sex alone, which we strongly oppose.

CASTRATION FOR MELANCHOLIA.

THE operation of castrating males for nervous and mental disorders is at last put upon a firm clinical basis. Oöphorectomy came from the South, and thence diffused its genial and unsexualizing influence over the East and North, but testectomy, if we may coin a word on so great an occasion, comes from the West. It was in 1891 that the Eastern Michigan Asylum published an annual report containing the history of a case in which the operation of castration was done for the relief of a "sickening neuralgia" of the testicles. The patient had not only neuralgia, but melancholia. One of the testicles was removed, and the testicle was found diseased, but not, as we understand the description, cystic or suppurating. The patient improved, but was not cured, and so, later, the second testicle was removed. The medical superintendent, Dr. Burr, now reports that the cure is complete. It is interesting to notice that both testicles had to be removed, just as, in the opposite sex, we are told that both ovaries ought to go in order to get the best results.

Here we have a case of chronic neuralgia and melancholia, in a man of fifty-seven, cured by castration. Neuralgia is very common, and so is depression of spirits. There is a fruitful field, therefore, in which ambitious andrologists may work. Shall we not soon begin to get reports of "my second series of one thousand castrations, with hints on technique?"

CRIMINAL TREATMENT OF CHOLERA.

UNDER this heading the *Correspondenzblatt für Schweitzer Aertzte* refers to two cases of cholera treated on surgical principles, both promptly dying. The physician whose fertile brain devised the new method is a Belgian, Lambolle by name, and was so proud of his brilliant achievement that he made it public in No. 46 of the *Semaine Médicale.*

The method of procedure was briefly as follows: 1. Laparotomy, which is the recognized stepping-stone to surgical fame. 2. Attaching the presenting knuckle of intestine to the abdominal wound. 3. Opening of the intestine. 4. Introduction of rubber tubing into the bowel. 5. Irrigation of the bowel in distal and proximal directions by sublimate solution (1 to 3,000).

After this slight surgical interference the patients received coffee and peppermint tea. The temperature then rose, the pulses became perceptible, they ceased to vomit and defecate, and—died. But the operation was successful, although there was no time for union by first intention.

What next will the ante-mortem laparotomist attempt "under antiseptic precautions?"

MEDICAL CENTRES.

PHILADELPHIA is justly proud of its medical institutions, and we rejoice to learn of their present prosperity. According to a recent census of matriculates (*Medical News*) there are now in attendance at the various regular medical schools, 1,774 students. The expansive fancy of the editor of the *News* is led to speak of this number as 2,000; and it is close upon it. Three years ago Philadelphia had but 1,286 students, and at the present rate of increase the 2,000 mark will be reached in a couple of years. Our esteemed contemporary is therefore only two years beyond date.

We are unable to give this year's statistics of the New York schools, but three years ago we had 2,146 matriculates, not counting 234 homœopaths, eclectics, and students of the Druidic Banchoreion. The number at present of regular medical students is estimated to be over 2,300, not including 1,000 physicians attending the post-graduate schools. New York is perhaps holding its own, but Philadelphia is following close upon us.

The town of Chicago, of which some people may have heard, had in 1889–90, 871 regular medical students, and 426 homœopaths, eclectics, physio-medicals, and other variations of the type.

THE COMFORT OF PHYSICIANS.

AT intervals during the coming year it is proposed to issue supplements to the MEDICAL RECORD, devoted to everyday phases of professional life which do not come within the strictly scientific sphere of the journal. Although the hardest-worked class among educated men, physicians give too little attention to securing comfort, rest, and relaxation, and an effort will be made at least to suggest methods of alleviating the hardships of the daily routine, and of using every advantage of modern civilization.

From time to time the subjects to be treated of in the succeeding supplements will be announced, and our subscribers are cordially invited promptly to send us any communications which their knowledge or personal experiences may suggest.

The first supplement of this series will appear early in 1893, and will be devoted to methods of conveyance, embracing every form of vehicle used by physicians, horses, clothing for man and beast, creature comforts, medicine-chests, saddle-bags, and office furniture.

An Old Family Mansion on lower Fifth Avenue, occupied by the late Dr. Frederick Bedford, has been torn down to make place for a large business establishment. The property was purchased in 1848 by Dr. Bedford's distinguished father, Dr. Gunning S. Bedford. He had at that time founded the medical school of the University of the City of New York, and had established the first clinic exclusively for women in the world.—*Boston Medical and Surgical Journal.*

The Highest Court of Germany has decided that legal human life dates from the beginning of labor, and that its destruction before full term is not murder. This decision opens a wide avenue of criminal possibilities.

News of the Week.

The Cholera still lurks in various parts of Europe. In the last week of November sixteen deaths occurred from cholera in Holland, and since then three fatal cases are reported from Gastel, in North Brabant, and one fatal case at Weesp, in North Holland. At Buda-Pesth the fresh cases now average two or three, with one death, daily. There have been several fresh cases of cholera, with two or three deaths, at Dunkirk and in the surrounding villages. The *Débats* publishes a telegram from Cherbourg, of November 29th, announcing the presence of the disease at that place and some of the neighboring villages, and of two fatal cases at Gonneville. Cases are still reported in Hamburg. Ninety-six cases were recently reported in Russian Poland within three days.

Murdered with a Sponge.—At a recent meeting of the Société de Médecine Légale an interesting communication was made, on behalf of Professor Cazeneuve, on a singular case of infanticide involving a somewhat unusual medico-legal problem. It was a question concerning an infant of five months, which had died suddenly in 1891 without showing any previous symptoms of disease. At this time there was no suspicion of crime, and it was only owing to certain rumors, sixteen months later, that the police took action and caused the body to be exhumed. The chemical analysis for traces of arsenic, lead, mercury, and other poisons came to nothing. However, further research led to the discovery of eight small pieces of an elastic blackish-gray substance blocking up the intestinal tract. After repeated washings and careful examination these were recognized as portions of sponge, and M. Cazeneuve was of the opinion that the ingestion of these fragments of sponge was the cause of death. In support of this opinion he cited the custom which obtains in certain country districts of killing stray dogs and predatory cats, by placing in their way small pieces of sponge soaked in grease, which, upon being swallowed by the animals, become swollen in the intestinal canal, after the manner of a sponge-tent, and thus induce fatal obstruction. Founding an opinion on these considerations, and also taking into account the fact that the portions of sponge presented a well-defined cut surface, the medical jurist concluded that circumstantial evidence was established that the child was caused to swallow the pieces of sponge in a vehicle such as milk or soup. The jury also took this view, with the result that the accused was sentenced to penal servitude for life.—*The Lancet.*

Alumni Association of Charity Hospital, New York.—The following officers have been elected for the ensuing year: *President*, W. L. Carr; *Vice-President*, R. C. Newton; *Secretary*, Alexander Lyle; *Treasurer*, Arthur T. Muzzy.

Dr. Francis Upton Johnston, of New Brighton, died at his home, recently, aged sixty-six years. Dr. Johnston was a graduate of the College of Physicians and Surgeons, and practised medicine in this city for several years.

Rectal Feeding may be carried on by means of a mixture of two eggs, twenty grains of pepsin, ten grains of chloride of sodium, and six ounces of water (*Detroit Emergency Hospital Report*). This mixture should be

slightly warmed, thoroughly agitated, and then gently introduced into the bowels by means of a syringe. To facilitate the entrance of the fluid into the intestines, it is well to put the patient in a position with the hips much elevated above the head; either the knee-chest position, or with two or three pillows resting beneath the hips.

Dr. Montgomery Jones died on December 18th, at his residence in Fort Edward, aged forty-five years. He was born in Rock Island, Canada, educated at McGill College, and practised in Sherbrooke and Chicago.

To Abolish the Death Penalty.—A very determined effort will be made this winter to have the Legislature repeal the section of the Penal Code relative to the infliction of the death penalty, and have adopted in its stead a life imprisonment section, as the severest penalty to be inflicted for murder in the first degree. Some of the strongest advocates of abolition of the death penalty are returned to the Legislature this year, and it is intimated by those who intend to press the matter that Governor Flower is not averse to its adoption, and in fact favors it. The proposed bill will take from the Chief Executive the power of pardon, and allow pardons to be granted by the court alone, upon the presentation of new evidence of an extenuating nature. There are at present eleven murderers in the various State prisons awaiting death, but the repeal of the law could not be effected in time to save any of these men, and, in fact, could not in any event, as it would not be retroactive.

The Late Mr. Colles, of fracture fame, is to have a memorial portrait in the Royal College of Surgeons at Dublin.

The Anti-tuberculous League of France has distributed over 2,600,000 circulars giving information how to prevent tuberculosis.

The Comma Bacillus of Cholera cannot live in caviare, says Professor Fraenkel; it dies very quickly on tobacco leaves.

Berlin has one hundred and eighty-three "Policlinics," so called, and the thing is getting to be overdone; the policlinics are really only private dispensaries.

The Number of Drug Stores in the United States is said to be 34,000, of which 10,649 are in the Eastern States. This makes about one drug store to every three doctors, and one to 1,700 of inhabitants.

Children and the World's Fair.—The Board of Lady Managers of the Columbian Exposition has undertaken to build and equip a structure devoted to children and their interests. A series of manikins will be so dressed as to represent the manner of clothing infants in the different countries of the world, and a demonstration will be made of the most healthful, comfortable, and rational system of dressing and caring for children according to modern scientific theories; while their sleeping accommodations, and everything touching their physical interests, will be discussed. Lectures will also be given upon the development of the child's mental and moral nature by improved methods of home training. There will be a crèche for babies and a play-ground for children.

The Family Physician Syndicate.—A company has been organized in Cincinnati, according to the *Lancet-Clinic*, which proposes to give, to those families who desire such protection, an absolute and sure method of providing a physician and surgeon of the highest professional standing, for sickness and accident, to any and all members of the family. The company also provides all the medicine necessary in such cases. The company also provides all medical and surgical appliances necessary in the treatment of these cases. The cost is from $15 to $20 a year, according to the size of the family. The *Lancet-Clinic* is much scandalized by the appearance of this company; but it seems to be only an enlargement, with a good deal of attendant noise, of the provident-dispensary and club-doctor system.

Professors von Pettenkofer and Emmerich have followed the example of a Paris physician and swallowed cholera cultures. They took bicarbonate of soda at the same time, in order to neutralize the acidity of the stomach, and they disordered their digestion by imprudent diet; but they did not get cholera. Von Pettenkofer's experiments have served the purpose of showing the importance, in development of cholera, of the proper soil. They do not disprove, however, the established fact that the comma bacillus is an essential to the disease.

Wire Mattresses in Lodging-houses.—At a meeting of the Board of Health, held December 7th, Dr. Joseph D. Bryant, as Chairman of the Sanitary Committee of the Board, recommended that all the lodging-houses in the city should be equipped with wire mattresses, to take the place of the textile mattresses now used. He also advised that in every lodging-house there should be provided a room for isolating lodgers suffering from, or suspected of being affected with, contagious diseases. The Board of Health has ordered that after April 1, 1893, wire mattresses and isolating be required for lodging-houses.

The Sixth Annual Meeting of the National Association of Railway Surgeons, embracing the United States of America, the Dominion of Canada, the Republic of Mexico, will be held at Omaha, Neb, the last Wednesday, Thursday, and Friday of May, 1893. The general subject for discussion will be "Injuries of the Cord and its Envelopes without Fracture of the Spine."

A Faithful District Physician.—In the Annual Report of the Post Graduate Hospital the following interesting incident is cited: "Some time ago the District Physician was called hastily to see a young man who was thought to be dying. After careful examination it was determined that he was suffering from appendicitis, and the only chance the young man had of life was an immediate operation. The doctor ordered a cab, carried the young man down three flights of stairs in his arms, and had him admitted to the hospital at ten o'clock at night. One of the attending surgeons was hastily summoned, and decided that it would be safe to wait until morning before operating. The following morning he was operated upon. For several days his life hung in the balance, but he made a good recovery and is now perfectly well. He must, necessarily, have died had it not been for the prompt surgical interference."

Another Bill for National Quarantine.—Mr. Brosius (Rep., Pa.), introduced a bill to provide for the improvement of the Federal quarantine service and for the tem-

porary suspension of immigration. It empowers the Secretary of the Treasury to establish Federal quarantine stations at Portland, Me., Boston, New York, Philadelphia, and Baltimore, and to put them in condition to prevent the introduction of contagious or infectious diseases. The stations shall be under the control of the Marine Hospital service. The Secretary of the Treasury is authorized to select plans for the erection of quarantine buildings. It is further provided "that for the security of the people of the United States against the introduction of Asiatic cholera, all immigration from European and Asiatic countries shall be suspended for one year from the passage of this act." Seven hundred thousand dollars is appropriated to carry out the provisions of the measure.

Obituary.

SIR RICHARD OWEN,

LONDON, ENGLAND.

Sir Richard Owen, the anatomist, died in London, December 9, 1892. He was born at Lancaster on July 20, 1804. He received his early education in his native town, and at the age of twenty he began a medical course in the University of Edinburgh. He completed his studies in London and Paris medical schools. When thirty years old he was appointed to the chair of Comparative Anatomy at St. Bartholomew's Hospital, and two years later he succeeded Sir Charles Bell as Professor of Anatomy and Physiology in the College of Surgeons. He held the latter place for twenty years, leaving it only to take charge of the Department of Natural History in the British Museum. He had the cross of the Legion of Honor, was a chevalier of the Prussian Order of Merit, and was one of the eight foreign associates of the French Institute. He was created a Commander of the Bath in 1873, and subsequently was made K.C.B. He wrote voluminously. Among his works are: "On the Nature of Limbs," "Lectures on the Comparative Anatomy of the Invertebrate Animals," "History of British Fossil Reptiles," "On the Gorilla," "On the Dodo," and "The Fossil Reptilia of South Africa."

WATTS C. LIVINGSTON, M.D.,

NEW YORK.

Dr. Watts C. Livingston, died December 19th at Green Cove Springs, Fla. He was born in Dutchess County seventy-three years ago. At the age of twenty he became principal of an academy in Seneca, and while there married Eleanor Palmer. Two years after he removed to Cortland, where also he conducted an academy. In 1849 he came to this city and entered the College of Physicians and Surgeons. He was graduated in 1852, and was appointed on the medical staff of the New York Hospital, where he served for a year and a half. He was a professor in chemistry in the public schools for several years. Dr. Livingston was a member of the Academy of Medicine, the Pathological Society, Physicians' Mutual Aid Society, and the Physicians' Medical Aid Association. His wife died last March. He leaves a daughter, the wife of Dr. J. Scott Aitken.

The New York College of Pharmacy, located since 1879 on East Twenty third Street, which has for some time past been contemplating a move uptown, has now secured a plot of ground, 75 by 100 feet, on Sixty-eighth Street, between Columbus Avenue and the Boulevard, and will erect a handsome and commodious building upon it.

Reviews and Notices of Books.

The Pocket Pharmacy, with Therapeutic Index. A Résumé of the Clinical Applications of Remedies Adapted to the Pocket-Case, for the Treatment of Emergencies and Acute Diseases. By John Aulde, M.D., Member of the American Medical Association, of the Medical Society of the State of Pennsylvania, of the Philadelphia County Medical Society, etc. New York: D. Appleton & Co 1892.

This work is, as the author explains in the preface, in the nature of a plea for small doses to be administered in accordance with physiological deductions. The pocket-case which the author recommends contains twenty-four drugs, and the book consists of a brief statement of the therapeutic indications of each of these remedies, taken up in order. Dr. Aulde is a firm believer in the efficacy of small doses of drugs and writes with all the enthusiasm and confidence of one who has proved the soundness of his faith by the crucial test of experience. Whether others whose faith in the value of drugs is less implicit will meet with equal success can only be shown by trial. The author himself says that "physicians who adopt this plan for the first time will be surprised at the prompt effects secured from medicine, but they will be more astonished at the number of ailments which can be met by this small number of drugs." We think it would have been better had the author adhered to his original plan of giving brief notes indicating the physiological actions of the drugs.

The Principles of Theoretical Chemistry, with Special Reference to the Constitution of Chemical Compounds. By Ira Remsen, Professor of Chemistry in the Johns Hopkins University. Fourth Edition. Thoroughly Revised. Philadelphia: Lea Brothers & Co. 1892.

This book is one of great utility to the student of chemistry in that it explains to him, as far as may be, the theories of chemical action and points out the grounds upon which these theories rest. There is yet much that is inexplicable in chemical action, and doubtless the prevailing theories will be modified as a result of further investigation and discovery, but it is obvious that no advance can be made except along the present lines; one must be familiar with what is now accepted and with the reasons for this acceptance before he can point out insufficiencies of current explanations of chemical phenomena or bring forward others to take their place. The object of the author of this work is stated to be to help students to get clear ideas in regard to the foundations of chemistry, and anyone who will study the treatise conscientiously must acknowledge that this object has been achieved. That it has met a want is shown by the fact that the four successive editions have followed one after the other at brief intervals of time.

An Illustrated Encyclopædic Medical Dictionary. Being a Dictionary of the Technical Terms Used by Writers on Medicine and the Collateral Sciences, in the Latin, English, French, and German Languages. By Frank P. Foster, M.D., Editor of the *New York Medical Journal*, Librarian of the New York Hospital. Vol. III. New York: D. Appleton & Co. 1891.

This volume of Dr. Foster's incomparable dictionary carries the work along Fascia to Minjak-Lazam. If any of our readers ask what minjak-lazam signifies we must refer them to the dictionary, where they will find it fully explained. Indeed it would be difficult to find in this book any omissions of words employed in medicine, and one puzzled by any term met with in his professional reading may turn to the work with confidence that the word will be there explained. The dictionary is, we fear, too bulky for everyday use by the average practi-

tioner, but it should nevertheless be in every doctor's library, to be used as a work of reference and a court of last appeal when other authorities disagree. It is a scholarly work of which the learned editor may well be proud.

INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, U.S.A. Authors and Subjects. Vol. XIII. Royal octavo, pp. 1005. Washington, D. C.

THIS volume is of the size corresponding with the previous ones, and commences with Sialagogues and ends with Sutugin. It includes 9,751 author titles, representing 4,213 volumes, 6,806 pamphlets, 13,498 subject titles of separate books and pamphlets, and 29,896 titles of articles in periodicals. It is edited, as have been the former volumes, by John S. Billings, Surgeon, U.S.A.

A MANUAL OF ORGANIC MATERIA MEDICA. Being a Guide to Materia Medica of the Vegetable and Animal Kingdoms, for the use of Students, Druggists, Pharmacists, and Physicians. By JOHN M. MAISCH, Ph.M., Phar. D., Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy. Fifth edition. With Two Hundred and Seventy Illustrations. Philadelphia: Lea Brothers & Co. 1892.

IN the present edition of this standard work the author has retained all the excellencies of the previous editions but has increased the utility of the manual by indicating the accented syllable of the systematic names of plants and animals. Some minor changes in typography, all in the way of improvement, have been made and a number of new illustrations have been added. The illustrations are, many of them, artistically executed and should be very helpful to the student who has not actual specimens of the crude drugs before him. As a text-book for students and as a work of reference for physicians and pharmacists the manual is of great value and well deserves the position it holds as a standard text book of organic materia medica pure and simple, unconnected with therapeutics.

A TREATISE ON DISEASES OF THE NOSE AND THROAT, in Two Volumes. By FRANCKE HUNTINGTON BOSWORTH, A.M., M.D., Professor of Diseases of the Throat in the Bellevue Hospital Medical College, New York, etc., etc. Volume II. DISEASES OF THE THROAT: With 3 Colored Plates and 125 Woodcuts. 8vo. Pp. 809. New York: William Wood & Co. 1892.

THIS, the second and concluding volume of Bosworth's text-book on diseases of the nose and throat, appears two and a half years after the first volume. It is divided topographically into three sections—the first is devoted to diseases of the fauces, including the oro-pharynx, soft palate, faucial pillars, and tonsillar regions; the second to diseases of the larynx; while the third, a shorter section, embraces the grave surgery of the larynx and pharynx; it is to the third section that the colored plates apply.

The author's anatomical descriptions are brief and to the point, his physiological reasoning is simple and scholarly. Under the head of "The Function of the Tonsil" the author states unequivocally that these bodies are largely absorbent, and not secretory; and that the so-called crypts of the tonsil are practically large tubular glands, and, as such, are designed for absorption.

Under the head of "Acute Pharyngitis" the author inveighs against the favorite practice of using astringents by means of the fruit-paste, or sugar lozenges, so current in England and in this country. The stomach and pharynx are in intimate sympathy, and the basis of these lozenges is nauseating. He prefers, when such a form of medication is used, to make a base of extract of licorice, as more agreeable and palliative.

Complete and thorough tonsillotomy is advised, when the necessity of this operation arises, and to this end Mathieu's instrument is preferred, on account of its bident harpoon, its long vertical, rather than antero-posterior fenestra, and the ingenious manner by which the tonsil is slightly drawn away from its bed. The author quotes the definition given in the "National Medical Dictionary," Philadelphia, 1890, of "tonsillotome," viz., "an instrument for slicing off a portion of the tonsil"—as delusive and misleading.

Great stress is laid upon the local treatment of the fauces in diphtheria, if one has fought successfully against the septic poison for twenty-four or thirty-six hours. More can then be done to prevent imbibition of the local septic process by active local measures than by any other mode of treatment. Preference is given to the salts of iron, and of these, first of all, the liquor ferri persulph. and the liquor ferri perchloridi; these diluted with alcohol and applied, under good illumination, on a probe. Next to iron the author places lactic acid, applied locally, in a fifty per cent. solution. The operations of intubation and tracheotomy in diphtheria are given much space. It will be a surprise to the unlearned to read Dillon Brown's statistics of 2,372 intubations with a recovery of 27.2 per cent., while the recovery from tracheotomy was 27.14 per cent. according to the same compiler. This is not the occasion to estimate the advantages or disadvantages of intubation, which has become so popular. The author reviews Bourdillot's statistics of the two methods, and concludes that intubation performed on children under two years of age gives a gain of 12.5 per cent.; between two and two and a half years, a gain of 12.5 per cent.; between two and a half and three and a half years, a gain of 11.9 per cent.; between three and a half and four and a half years, a gain of 3.7 per cent.; between four and a half and five and a half years, a loss of 6.7 per cent.; and over five and a half years, a loss of 2.2 per cent. The present mode of intubation must be accredited to O'Dwyer, of New York, though the idea of inserting a tube into the windpipe for the relief of dyspnœa dates back to Hippocrates.

Tuberculosis of the fauces and of the larynx are placed in their proper sequence by the author—that is, both are manifestations of acute miliary tuberculosis. On this point the views are broad, and will meet with approval by the profession. Cases of local tuberculosis may be endured, and may be cured; but they must be regarded as forerunners of a systematic lesion, which sooner or later will express itself. Palliative rather than astringent measures are recommended, while inhalations of steam and of hot medicaments are not advised. The author places his main reliance in treating tubercular ulceration of the fauces and larynx upon such palliatives as cocaine, morphia, iodoform, etc., but does not feel that he has done his duty without administering lactic acid locally, as recommended in diphtheria, and claims that the two plans are not antagonistic. The author emphasizes the virtues of creosote in small doses, progressively increased, within fixed limits. He doesn't favor doses as high as forty and fifty grains a day.

Chapter XXI., on "Neuroses of the Fauces," is admirably written, but is all too short—only twenty-three pages being devoted to it. These affections are classified as: 1, Abnormalities of Sensation; 2, Neuralgias; 3, Reflex Neuroses; 4, Spasmodic Disturbances, or Chorea; 5, Myopathic Paralyses; 6, Bulbar Paralyses, or Paralyses due to central lesion.

It is unnecessary to more than indicate the salient features of a text-book so admirably equipped as Dr. Bosworth's second volume. There is an independence of opinion and a broad view of disputed points which do not clash. Firm convictions carry weight to the beginner in laryngology, and confirm the well known beliefs of the author with his colleagues.

Both author and publishers are to be congratulated on the good appearance of the book, and on the quality of its illustration.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, December 1, 1892.

A. L. LOOMIS, M.D., PRESIDENT, IN THE CHAIR.

Diagnosis and Treatment of Cholera on Swinburne Island.—DR. JOHN M. BYRON read a paper on this subject. He gave the number of the cases on the different ships, and the dates of their departure and arrival, which had brought cholera over from Europe during the fall. The total number of cases of cholera on Swinburne Island had been seventy-four, besides a number of suspects. There were twenty deaths, two occurring within two hours. There were some deaths also from bronchopneumonia, and a limited epidemic of measles. To establish beyond doubt the nature of the disease, a series of bacteriological observations were made on the island, and comma bacilli were found. With few exceptions the malady was of the more serious type. The small number of evacuations, however, was a feature to be noticed. The majority of cases of death occurred during the period of asphyxia; rigor mortis, as usual in cholera, set in early, with muscular contractions, throwing the body into strange attitudes.

Treatment.—The prophylactic measures adopted proved to be the most powerful means of controlling the disease; they were able to stop the cholera in affected ships within the period of five days. The affected ship was visited twice a day, and all suspected cases removed; if necessary a midnight call was made. The water which the ship brought over was all pumped out, the tanks cleansed and disinfected, and a fresh supply of water substituted. The ship's surgeons were instructed to allow no water to be used until it had been boiled, to burn all the food brought by the immigrants, bathe the passengers in sea-water, disinfect the clothing, and hoist a yellow flag as soon as a case occurred on board. The details of disinfecting the steerage, etc., were mentioned.

The treatment of Asiatic cholera was based on a knowledge of its cause. There was a germ which gained access to the intestine and produced a toxicant. On this basis several methods of treatment had been approved by high authority, to which the author referred, such as the use of calomel during the premonitory stage, bichloride, salol, etc. Medicine given, however, to reach and disinfect the intestine seldom accomplished the object; intestinal irrigation seemed to answer this purpose much better. It had been objected that fluid would not pass beyond the ileo-cæcal valve, but this had been disproved by various experimenters, and at Swinburne Island. Saline injections were also made into the circulation, and in only one case did an abscess result. Hypodermoclasis produced effects which were wonderfully beneficial. The vomiting was stopped by giving small pieces of ice, carbonic water, and champagne. The stomach-pump was sometimes employed, and the stomach washed out with a slightly acidulated solution. Inhalation of oxygen had proven useful. The diet had consisted mostly of milk, carbonic water, champagne, and beef-tea, when the stomach would permit. Out of the total of seventy-four cases of cholera, twenty had died, six within two hours after being attacked; three had died from complications. This was considered a very low percentage when it was remembered that usually one-half of all patients died during cholera epidemics. There was room, however, for improvement of the methods used at Swinburne Island.

Personal Experience with Cholera during the Late Epidemic of Cholera at St. Petersburg and Hamburg.—DR. ELMER LEE, of Chicago, read a paper with the above title. (See previous issue.)

Disinfection during the Cholera in Hamburg and Berlin.—DR. AUGUST SEIBERT, in a paper with this title, gave the results of his observations on disinfection against cholera, and also other contagious diseases, in Berlin during the few months past, and stated wherein the method was varied somewhat at Hamburg. The subject was divided into disinfection at the patient's home, hospital disinfection, and the use of heat and steam at stations. Home disinfection was employed in cases of cholera, typhoid fever, diphtheria, and some of the other infectious diseases. A corps of workers was sent with all necessary apparatus in satchels, and every step was carried out in the most scrupulous and detailed manner. The disinfectants employed, besides cleanliness, were milk of lime, carbolic acid, and corrosive sublimate. The proof of the efficiency of this method had been shown in the fact that in Berlin not a second case of cholera had developed in a house in which a patient had been taken ill or died. In Hamburg the proof of its value had not been made so simple and clear, for the reason that the disease there had been spread through the infected water of the river Elbe. Dr. Seibert took occasion to disabuse the impression in the public mind, here created through newspaper reports, that Hamburg was a dirty city. He stated that no street there was as filthy as Third Avenue, and the tenements in New York could not be compared in cleanliness with those in Hamburg.

DR. DE LAND, of Philadelphia, who had also had some experience with the cases at Swinburne Island, spoke of the value of intestinal irrigation and hypodermoclasis, and showed the apparatus which was there employed. It consisted of a fountain with rubber tube, and to the latter they attached an œsophageal tube with two side-openings near the distal end, which was introduced as far up the gut as possible.

DRS. SEIBERT and BYRON wanted to know in what respect Dr. Lee claimed originality for his practice. They insisted that it was essentially the same as that used by Cantani in 1865, and to which special attention was again called in 1884. Cantani used an acidulated solution which they believed was better than soap-suds, because the cholera germ required an alkaline fluid for its existence.

DR. LEE said that so far as he had witnessed the injections made by others, only about one quart of water was used, which was a very different thing from flushing the gut with as much as three gallons, as he practised it.

The other speakers said Cantani's method also implied the use of large quantities of the fluid.

This meeting having been under the charge of the Section of Public Health, Dr. Chapin, chairman, the section elected new officers: *President*, Dr. S. T. Armstrong; *Secretary*, Dr. F. H. Dillingham.

More Scientific than Clean.—German physicians and surgeons, in their own country, are the most pronounced in the profession on the subject of antiseptic treatment of disease, and antiseptic surgery. They have outdone Lister many-fold in their attention to aseptic and antiseptic precautions. Their invention of antiseptic applications, and their attention during operations, in the way of dress and sterilizing apparatus, to all the details that tend to the destruction of bacilli, are to some even painfully painstaking and minute. Yet, with all the theory and practice of the profession, in Germany, on this subject, the people are far behind the English (we won't say the Americans, lest we be suspected of egotism) in real sanitary science. The sewerage of their towns is notoriously defective. The smells that come from their narrow streets are appalling even to a New Yorker, who may be supposed to be pretty thoroughly accustomed to smells and dirt. And the arrangement of their domestic hygiene, in their great buildings, in their hotels, especially as to baths and lavatories, leaves very much to be desired. In other words, unpleasant as it may sound, the English race, as it appears to the average traveller, is a much cleaner one than the German, although the latter is far more scientific.—*Post Graduate.*

PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, December 2, 1892.

CHARLES L. DANA, M.D., PRESIDENT, IN THE CHAIR.

Extensive Laceration of the Wrist; Good Result.—DR. CHARLES MCBURNEY presented a boy, eight years of age, as an example of excellent result after very extensive division of the soft tissues of the wrist by a broken bottle, in April. Everything was divided down to the bone except the radial artery and flexor carpi radialis; all the other tendons, and the ulna and median nerves, were separated. His house-surgeon, Dr. Blair, reunited the tissues almost immediately after the accident. The ulna and the median nerves were each brought end to end by four catgut sutures. The return of sensation had been, in Dr. McBurney's experience, remarkably early, being nearly complete at the end of five weeks. It seemed perfect at the present time. Unfortunately the boy left off treatment for some time and complete extension was somewhat delayed, but he was now, under massage and electricity, rapidly regaining perfect use of the hand.

Trephining for Cranial Injury.—Dr. McBurney also presented a boy, about sixteen years of age, who had had a weight fall on his head in June, 1891, causing an extensive scalp wound. He was taken to one of the city hospitals and the scalp was sutured, but nothing was done to the skull. He was unconscious for about two weeks, had right hemiplegia several weeks, and about three weeks after the scalp wound had healed, had a convulsion which affected, as he described it, the right side. He left the hospital, and had about ten or twelve convulsions during the year. The convulsions then showed a localizing character, affecting the right hand, fore arm and upper arm, occasionally the right side of the trunk and right leg; the face never. At first speech was interfered with considerably, but at present very little.

The convulsions were increasing in frequency and the boy was sent to him for treatment. He depended upon Dr. Starr for localizing the centre of cortical irritation. There was a linear scar at one point, and at another a slight irregular depression of bone about two inches by one and one-half, which, however, did not correspond to the centre of cortical irritation as pointed out by Dr. Starr. Although tempted to operate at the site of depression, he did not, but followed Dr. Starr's diagnosis and trephined just behind the fissure of Rolando, taking out about an inch of bone. Directly beneath he found a depressed piece of the inner table buried in the dura mater, and evidently compressing or impinging upon the surface of the brain. When it was removed the brain was seen to be slightly injured beneath. The surrounding bone was slightly depressed, but there was no reason to believe that the brain had been further injured, and the opening was not enlarged. Sufficient time had not yet elapsed to say whether the convulsions had been cured. He presented the case as one in which the objective indications for trephining at a particular place were extremely plain and yet entirely worthless, while the subjective indications were perfect.

DR. BRYANT referred to two cases in which he had sutured divided tendons and nerves with satisfactory result, as far as could be determined during the short stay the patients were under observation.

THE PRESIDENT thought physiology taught us to-day that, where divided nerves were sutured together, the restoration of function was not due to what could strictly be called anatomical reunion of the severed parts, but to a form of anastomosis. He must confess, however, that the method in which function was restored was somewhat obscure in his own mind.

DR. WEIR remarked, regarding the second case, that it was a most instructive one regarding localization and successful removal of an irritating object. He must say, however, that the results of operations for epilepsy, even of the Jacksonian form, were very disappointing.

DR. BRYANT said this patient was in Bellevue Hospital last winter, and he was about ready to operate for the epileptic convulsions when the boy made his escape.

Neurectomy of Trigeminal Nerve at the Foramen Ovale by Sulzer's Method.—DR. R. F. WEIR presented a man, aged fifty-two, who had been a sufferer from tic-douloureux for thirty-seven years. In 1880 the infra-orbital branch of the trigeminal was removed nearly up to the foramen rotundum by Carnochan's method, *i.e.*, by going through the antrum anteriorly and posteriorly.

In 1882 his inferior dental nerve was divided by Dr. Seguin within the mouth, just above the dental foramen.

Relief of pain was obtained for three years. Since then great agony has been experienced until June last, when examination having shown that most of the pain was experienced along the cheek and side of the nose, though some existed also along the auricular temporal distribution, another operation was decided, after conference with Dr. Starr, to expose, in the temporal region above the zygoma and cutting across the temporal muscle, the base of the skull, when by peeling off the tissues with the handles of the scalpel or periosteal scrapers, the foramen rotundum was brought into view. The operative field was widened by division of the zygoma, just in front of the articular eminence and also at the malar junction. This allowed the divided temporal muscle to be materially depressed. The nerve was seized with a forceps and cut off flush with the base of the skull. Only a small portion could be removed and no regeneration of it forward was recognized. The wound of the muscle was closed by silk-worm-gut and the replaced zygoma held in place by similar sutures through the divided periosteum. Rapid recovery took place with primary union. While, however, arrest of the pain of the cheek and nose occurred, yet the neuralgia of the inferior branch of the nerve decidedly increased. This was at first attributed to the handling that the nerve received at the time of the last operation, for it also then came well into view. This neuralgia, however, persisted and increased during the summer, extending to the teeth of the lower jaw. In September the wound was reopened along the line of the previous cicatrix, the zygoma again chiselled off, the three branches of the nerve as it emerged from the foramen ovale was divided, and a section of the nerve nearly an inch long removed. Since then absolute freedom from pain and good motion of the jaw has resulted.

A similar case of recurring neuralgia after division at the dental foramen has been treated in the same way, the foramen ovale being plainly visible after the section and removal of the nerve.

Dr. Weir commended the procedure above any of the others resorted to for the relief of neuralgia of the fifth nerve, not only because of its access to each of the lower branches at its highest external point, but because of the ease of the operation itself and its freedom from subsequent impairment of the motion of the jaw. These advantages do not so satisfactorily belong to the methods of Horsley and others. As the point of recurrence is well brought out in these cases, it is possible that additional relief may be called for in the future. Then the external method of Rose to reach the Gasserian ganglion, which allows only of imperfect work, can be resorted to, or—more dangerous but more thorough—the skull can be opened and the ganglion reached and extirpated either preferably by Hartley's plan of keeping outside the lifted-up dura mater, or by employing that of Horsley, who opens the dura and exposes the ganglion by raising the brain itself from the cranial base. This is confessedly the more dangerous procedure, and offers no advantage over Hartley's simpler method.

DR. MCBURNEY said he was rather of opinion the internal operation suggested by Dr. Hartley was not a very dangerous one.

DR. WEIR had intended to say merely that it was more dangerous than the other alluded to.

DR. MCBURNEY doubted even that. The healing was

very rapid, and as the dura mater was not opened he did not see that any special danger was incurred. The simple act of opening the skull would not, in the light of numerous recent trephining operations, seem to increase the danger. He was at present accustomed to treating all trephine operations by immediate suture, without drainage. The internal operation, without opening the dura, offered a very clear view of the parts to be removed very near their origin, and he hoped and believed that it would prove safe and satisfactory.

The President asked Dr. McBurney whether any trophic disturbances had followed the operation.

Dr. McBurney replied that he had seen none, but the cases were too recent to speak definitely on that point.

Dr. Weir said there were two cases on record in which damage to the Gasserian ganglion had been followed by loss of the eye, but when asked by Dr. A. H. Smith whether that was not the usual result of experiments on animals, he replied that it had not been true of the three or four operations upon man.

The President thought the explanation suggested by one gentleman, that the destruction of the eye might have resulted from want of protection to the cornea, was not correct, for injury to the trigeminus might pass without eye lesion, while pathological destruction of the Gasserian ganglion had caused inflammation of the cornea and atrophic disturbances.

Dr. Andrew H. Smith remarked that in the experiments upon animals to which he had referred, destruction of the eye took place within two days after removal of the Gasserian ganglion.

Dr. Beverley Robinson raised the question whether—since previously to the operation done by Dr. Weir upon this patient the more formidable procedures resorted to had been followed by a return of the symptoms—it would not have been safer and better to have given him such relief as could be afforded by rational medication.

Dr. Weir replied that he accepted the view which had been expressed by Dr. McBurney, that not all these operations were formidable ones. They were safe procedures, and although they might be followed by recurrence, yet the patient had a period of absolute freedom from the pain which was very gratifying.

Dr. McBurney also expressed the opinion that the operations done upon the patient presented were quite justified, for they were not formidable, and often resulted in complete respite from pain as long even as three years. It was only after failure of such procedures that anything like a formidable operation was resorted to. He had never seen any serious accident result.

Microscopic Specimens from Trichiniasis.—Dr. Andrew H. Smith presented under the microscope one of the mother-worms found in the vermiform appendix of a patient who had died of trichiniasis.

Note on the Use of Heart Stimulants, and Particularly of Strychnine, in the Treatment of Acute Lobar Pneumonia.—Dr. J. West Roosevelt read the paper (see p. 728).

Dr Beverley Robinson expressed some surprise that strychnine could be given in such large doses without producing toxic phenomena, for in some patients much smaller doses had seemed to do harm by interfering with sleep and causing irritability.

It had been more or less common in New York, for a year or two, to employ in pneumonia a pill composed of aconitin, strychnine, and digitalin. Considerable doses of digitalin, repeated every hour, or two or three hours, during the twenty-four, had been taken by some healthy adults without any appreciable effect upon the pulse or respiration, and Dr. Robinson had begun to think that there was a good deal of difference in the action of certain of the alkaloids, especially between those of the crystalline and those of the amorphous form, the latter being much less efficient. He doubted whether digitalin given in the pill already mentioned was a heart stimulant of great value.

Withhold Stimulants until they are Needed.—Dr. George L. Peabody thought the author's experience very valuable, and that it ought to be tested by others. He fully agreed with him with regard to the impropriety of giving stimulants, especially alcohol, to a patient because his heart might become enfeebled, but was not yet so. He could not believe that such was a general practice, unless by medical tyros. He had frequently to curtail the amount of alcoholic stimulants prescribed by the house staff in hospitals.

Dr. Andrew H. Smith had been much surprised at the amount of strychnine which Dr. Roosevelt had been able to give. Such experience illustrated the fact that many powerful drugs could be given in much larger doses than had been supposed. For example, who without experience would not be startled at the amount of arsenic given by Dr. Osler, especially in pernicious anæmia: half a drachm of Fowler's solution three times a day. In giving alkaloids it should be borne in mind that they did not, as far as he knew, add anything to the nutrition of the heart-fibre. Their action was simply that of applying the whip, which might be useful in carrying the patient over a critical period, as it would in urging a horse over a weak bridge before it could collapse. If the stimulants were used long, forcing the heart into unnatural activity, it was at the expense of molecular action and loss of strength, and was liable to bring on bankruptcy. Digitalis had never given him much satisfaction in pneumonia except when the heart was becoming intermittent, when it might restore the rhythm. There was a distinction to be made between failure of the heart as a whole and failure of the right side of the heart. Right heart failure, as distinguished from heart failure, was liable to take place when there was much obstruction to the circulation in the lungs, and ought to be managed differently from the cases in which the primary danger was to the heart as a whole. For instance, raising the patient with pneumonia, in bed, incurred risk to the entire heart, because of its participation with the rest of the muscles in the general weakness induced by the disease. That was very different from the inefficiency of the right heart due to sluggishness of the pulmonary circulation.

Dr. F. P. Kinnicutt had given very large doses of strychnine hypodermically in pneumonia, with very satisfactory results. He had not, however, carried it up to one-thirtieth of a grain. If compelled to rely upon only one drug as a cardiac stimulant in pneumonia, he would choose strychnine. The uncertainty of some of the alkaloids had forced itself upon his mind, as it had upon Dr. Robinson's. He had used a certain preparation of aconitin in pneumonia with satisfactory results in obtaining the object for which it was given, the reduction of the pulse. The fall in the pulse, however, was sometimes alarming. Not infrequently the number of beats fell from ninety to forty. Response to alcoholic stimulants was likely to take place readily afterward.

Dr. Roosevelt said, during some concluding remarks, that tolerance for strychnine was quite easily established in pneumonia. He had seen no toxic symptoms or restlessness produced by it.

Report of the Fourth Laparotomy in a Hysteric Patient.—Dr. Joseph D. Bryant read the paper (vide page 726.)

Dr. Andrew H. Smith said that about January, 1892, a patient was brought to the Presbyterian Hospital who was vomiting fecal matter. She had a cicatrix in her abdomen, the result of a former laparotomy for the cure of a supposed fistulous connection between the colon and stomach. At first she was allowed to go to the closet, but subsequently this was prohibited, yet she vomited fecal matter as before. Then she was watched very carefully, and was on one occasion surprised with a handkerchief full of fecal matter concealed in the bed, ready to be swallowed. Immediately after this discovery she asked to be discharged, and he supposed she went pretty straight to Bellevue.

Pretended to Vomit Blood.—Dr. Peabody said that, some years ago, when he went on service at the New York Hospital, he was told by the physician who preceded him that there was a woman in the ward who vomited large quantities of blood, and that she must have an ulcer of the stomach. The amount of blood vomited was so great that all were surprised she did not become exsanguinated and die. The newspaper reporters were writing up the case of the charming young actress who was dying of some obscure disease at the hospital. On two or three occasions a large basin half full of the blood was sent to him at his laboratory for examination, and he found that it looked like fresh blood, but it did not coagulate. She was placed under surveillance, and was found to have one pretty constant visitor who dressed like a countryman, was old enough to be her father, and who wore a duster which screened a package of some size. He ordered this visitor to be excluded, whereupon the vomiting of blood ceased. Then on examination her trunk and wardrobe were found to contain a number of large bottles in which the blood had evidently been brought by this visitor, obtained, it was thought, at some slaughter-house, defibrinated. After this exposure and some others she left the hospital, but was brought back several times by ambulance. He afterward heard that she was in a house of prostitution. Dr. Tuttle, who was then senior house-physician, said the thermometer registered 110° to 112° F., except when held by the physician, and then it recorded normal temperature. It was not discovered how she caused the rise.

Dr. Norris, present by invitation, said he saw Dr. Bryant's patient in the hospital ward of the Penitentiary, where he performed the third laparotomy referred to in the paper. She had been in the Penitentiary three months when she began to have apparently fecal vomiting. The house-surgeon saw her vomit next day, and in the afternoon laparotomy was performed, but they found no intestinal obstruction, or connection between the stomach and intestine. After a time the fecal vomiting began again, she refused to eat, and wished to be fed by the rectum, but there was no vomiting of the fluid injected. She was discovered by the nurse leaving her bed and taking food from other patients. He believed she was still seemingly vomiting fecal matter when she left the hospital.

The President suggested that had this patient been put through all the tests for hysteria, concentric limitation of the field of vision and other evidences of that state might have been found.

A New Drug with Specific Action on Lupus.—The discovery of the eclectic action of *Thiosinamine* upon diseased tissue by Dr. Hebra has awakened very great interest on account of the value that the new remedy apparently possesses in the treatment of lupus, caries, necrosis, and other inflammatory processes. Thiosinamine is prepared from the volatile oil of mustard by heating a mixture of two parts of the oil, one part of absolute alcohol, and seven parts of liquor ammonia, sp. gr. .960, in a waterbath at 40° C. for several hours. In the trial cases which Hebra undertook two to three divisions of a Pravaz syringe, equivalent to five to seven grains thiosinamine, were injected twice weekly. With these small quantities a visible improvement in the disease was apparent, although in lupus of not very extensive character the reaction was often so slight as scarcely to be observed. In the case of inflammatory affections of the eyes it was sufficient, however, to considerably increase the inflammation, the intensity of the reaction being in inverse proportion to the extent of the process. With lupus patients the dose was increased in the third week to half a syringeful, and in the fourth and fifth weeks to a whole syringeful, of the fifteen per cent. solution, the latter dose being continued for two or three months, so long as the typical reaction occurred and the cure was not completed.—*Notes on New Remedies.*

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE SEATS OF HÆMOLYSIS AND THE NATURE OF THE HÆMOLYTIC CHANGE—THE ACTION OF CHOLAGOGUES—SUCCESSFUL EXCISION OF CANCEROUS GROWTH OF ILEUM—ATHLETIC EXERCISES AS A CAUSE OF DISEASES OF THE HEART AND ARTERIES.

London, December 3, 1892.

In his second lecture, Dr. William Hunter proceeded to discuss the question as to what were the seats of hæmolysis. The organ which at once suggested itself, he said, was the liver; the spleen was also, at least, a probable seat of the process. Observers, however, were by no means agreed as to the significance we should attach to the blood-pigment so frequently found in one or other of these organs, or in the bone-marrow. It was still an open question how far the presence of pigment in an organ indicated that that organ was the seat of an actual destruction of blood-corpuscles, as distinguished from a mere burial-place of old corpuscles that had gradually become functionless. It also remained to be ascertained—assuming that these organs were the seat of hæmolysis—to what extent they acted independently or in association with each other, and how far their relative activity in this respect might be judged of by the relative amount of blood-pigment they contained.

Dr. Hunter said his observations on the spleen lent no support whatever to the view that the presence of blood-pigment was in any way connected with, or could possibly be referred to, the occurrence of capillary extravasations of blood. So far as mere collecting function was concerned, he found the liver a far more important organ than the spleen, as judged by the results of injecting carmine or ultramarine blue into the blood. He found experimentally that the cells of the spleen had the power of arresting red corpuscles before the latter had undergone sufficient change to allow of their enclosure by leucocytes He concluded that the spleen was the most active organ in the body in withdrawing from the blood red blood-corpuscles in process of becoming effete, and that its activity in this respect was greater than that of the whole body of leucocytes. Evidence of a similar, though less conclusive, character was afforded by experiments on the bone-marrow. In regard to the liver, his observations lent no support whatever to the view that a destruction of blood took place within the liver-cells; whatever hæmolytic change occurred in the liver took place within the capillaries. Presence of blood pigment within the capillaries had, therefore, a certain significance. Blood-pigment within the cells afforded no index whatever of the amount of hæmolysis that had taken place in the liver; it was only evidence that so much hæmoglobin had been broken up within the liver-cells, without affording any indication as to where the preceding hæmolysis had occurred—whether in the capillaries of the liver, or outside the liver, or in the spleen, or in the circulation generally.

The lecturer remarked that the information derivable from a study of the distribution of blood-pigments as to the seats of hæmolysis, was comparatively limited, and mainly negative in character. He had derived more important information from a study of the morphological changes found in plasma, red corpuscles, and white corpuscles during active hæmolysis. He had injected poisons—and especially toluylenediamin—into the blood to induce active hæmolysis. He found that the spleen was the chief seat of active hæmolysis. The rôle of the liver was subordinate. Toluylenediamin frequently caused a largely increased deposition of blood-pigment within the liver—especially within the cells. It was, however, evident that the liver had little to do with the destruction thus caused, since, by removing the spleen, the destruc-

tion could be abolished altogether. The sole part the liver took in the process was to dispose of the products, especially of hæmoglobin. After removal of the spleen where did hæmolysis occur? As regarded blood-pigment, the place of the spleen was taken chiefly by the capillaries of the liver and by the bone-marrow, but blood-pigment had but a limited significance in this relation. He had found experimentally that the chief seat of hæmolysis after removal of the spleen was not the liver, but the portal capillaries within the gastro-intestinal tract. This area was second only in importance to the spleen.

Hæmolysis being thus confined mainly to the capillaries within the portal area, all the products must pass through the liver before reaching the general circulation. It was then the rôle of the liver became manifest. A certain amount of blood destruction might take place within its extensive capillary area, but the chief rôle of the liver was, not to induce hæmolysis, but to dispose of its various products, whether chemical or morphological.

Important differences existed between the hæmolytic action of toluylenediamin and substances like pyrogallic acid, glycerine, or distilled water. The latter acted directly on the blood, the amount of destruction being proportional to the quantity injected, and ceasing when they had left the blood. The action of toluylenediamin, on the other hand, was not immediate but more remote, and took place at a time when not more than a few milligrammes were to be found in the whole blood. Nor was it proportioned to the amount injected, for it might be great with a small dose (when the spleen was present) and absent altogether with double the dose (when the spleen was absent). Outside the body its addition to normal saline solution, in proportions as great as one-fourth, one-half, or one per cent., actually increased the preserving power of such a solution toward red corpuscles, while within the body it gave rise to the most marked changes in the red corpuscles. Further confirmation of this distinction was obtained from experiments in which the spleen was excised, and pyrogallic acid subsequently injected; the removal of the spleen did not materially influence the action of the latter. The lecturer regarded this result as establishing, (1) the important differences between substances that acted directly and those that acted indirectly in destroying the blood, and, (2) the importance of the spleen in determining the action of the latter. The importance of this consisted in the fact that, according to his observations, hæmolysis in health, and usually in disease, was of this indirect character. In disease the exceptions to this statement were paroxysmal hæmoglobinuria, and the hæmoglobinuria attending severe burns and scalds, where the destruction was obviously occasioned by direct action on the blood, and on the blood of the general, as distinguished from the portal, circulation.

Hæmolysis, then, in health was a process initiated by the activity of cells—more especially of those having a peculiarly close relation to the blood, viz., of spleen and gastro-intestinal tract. The degree of hæmolysis was strictly defined by the activity of those cells; it was therefore slight during starvation and greatest during digestion. The evidences of this change in the blood at this time were, (1) the increase of flow of bile and bile-pigments which occurred during active digestion, and, (2) the presence of many morphological changes in plasma and red corpuscles within the spleen, which, according to his observations, were to be found in such great abundance in the spleen during digestion, while comparatively few in number in the spleen of the starving animal. The activity of the cells of spleen and gastro-intestinal tract was also evidenced by the increase in the number of the luecocytes of the blood during digestion, and by the accompanying increased excretion of uric acid; also by the increased tendency of the portal blood to coagulate at this period.

Dr. Hunter concluded the lecture with a few remarks on cholagogues. Within the limits of health, he said, next to digestion, the greatest hæmolysis took place under the action of cholagogue agents. Their action was evidenced chiefly by an increased flow of bile and an increased formation of bile-pigments. The latter must have been preceded by an increased destruction of blood. Since, however, he had shown that destruction of blood occurred chiefly outside the liver, and was effected mainly by the lymphoid cells of spleen and gastro-intestinal mucosa, he concluded that the initial action of such agents was not on the liver, but on those other cells, and that the part the liver played was to excrete the products so formed. This view by no means excluded the one that these agents also influenced the activity of the liver-cells; on the contrary, such was probably the case. What he concluded, however, was that this action on the liver cells did not account for everything; it did not account for the chief change, viz., the preceding hæmolysis; but, to be effective at all, the cholagogues must first act on the blood through the intermediation of the lymphoid cells of spleen and gastro intestinal mucosa.

At the last meeting of the Clinical Society Mr. Arthur Roper read the notes of the case of a patient, aged fifty-four, from whom a cancerous growth of the ileum had been successfully excised by Mr. W. A. Lane and himself. A Keith tube was tied into the bowel above the stricture, through which the contents of the bowel escaped freely; the growth was excised a few days later. When the patient had gained strength and flesh, the question of establishing intestinal continuity and closing the abdomina wound was discussed, but the patient refused, as she was more comfortable than she had been for years.

At the Medical Society Dr. Collier, of Oxford, read a paper on "Athletic Exercises as a Cause of Diseases of the Heart and Arteries." He urged that the evidence was conclusive as to the effect of frequently repeated muscular exertion in the production ot heart disease. The danger lay in the frequent repetition of severe muscular effort. The lesions developed soonest in the badly fed. Dr. Collier referred to the researches of the late Dr. Peacock on Cornish miners, of Dr. Clifford Allbutt at Leeds, of Dr. DaCosta on the production of "irritable heart" in soldiers, and to those of Dr. Morgan on the after-history of university oarsmen. The latter physician had contended that the majority were benefited rather than otherwise by their exertions, but his researches bere upon picked and carefully trained men.

Bureau of Hygiene and Sanitation of the World's Columbian Exposition.—The above bureau has been organized under the Department of Liberal Arts, to prepare a collective exhibit illustrative of the present condition of sanitary science. The bureau will arrange for the presentation by exhibitors of models of sanitarily built and equipped dwelling-houses, urban, and rural, farm-houses, school-houses, public lavatories, closets, and urinals, crematories for the dead, crematories for garbage, etc. Laboratories for bacteriological research and for analytical investigations will be exhibited, food and food adulterations, the problems of water supply, drainage, sewerage, ventilation, and heating. The following is the general classification under the division of Hygiene: Gymnasia and gymnastic apparatus, alimentation, dwellings, etc., hotels and lodging-houses, public baths and lavatories—a group which seems to include, in the circular of the bureau, everything from urinals and earth-closets to wall-paper, clothing, crematories, and laboratories; hygiene of the workshop and factory; protective supervision.

Some Cruel Things for Anti-vivisectionists to Look after.—Castrating horses, pigs, sheep, dogs, cats, etc.; docking horses' tails; hunting foxes, hares, rabbits; hooking fish for sport; shooting pigeons at matches; poisoning rats with strychnine and arsenic; fattening geese for *pâte de foie gras*; trapping rabbits.

OUR BERLIN LETTER.

ERYTHROMELALGIE—A NEW DISEASE—LOUISE LATEAU RELAPSE—THE RESULT OF EXTIRPATION OF KIDNEYS FOR THE RELIEF OF TUMORS OF SAME—THE EXTIRPATION OF 135 C.C. OF GANGRENOUS SMALL INTESTINE—THE ETIOLOGY OF PERTUSSIS—PROFESSOR V. PETTENKOFER'S EXPERIMENTS AND IDEAS IN REGARD TO THE CHOLERA —PROFESSOR LEYDEN ON THE CHOLERA BACILLI.

BERLIN, November 22, 1892.

SINCE the abatement of the cholera medical matters are drifting in different directions. As medicine stands to-day, there is hardly a single disease that has not undergone a bacteriological crisis, and it will seem quite a sensation to state that diagnosis of disease with the aid of plate-cultures and éprouvettes seems to have been discarded for the older approved methods, which are clinical only, and which have stood the test for so many centuries.

That we can find numerous interesting points without the aid of the bacteriologist, seems to have been shown by a paper read in the last meeting of the Berlin Medical Society, by Professor Senator, on "Erythromelalgie." The disease is not entirely new; it was first mentioned by your distinguished countryman Weir Mitchell. It was, however, almost forgotten until recently Gerhardt, Senator, and Bernhardt simultaneously rediscovered it.

The disease affects men in middle age, say thirty to forty-five years of age, more especially those exposed to tedious journeys. At the commencement there are severe neuralgic pains, localized usually on the lower, seldom on the upper, extremities, redness of the affected parts, increased temperature, and sometimes swelling. Heat increases the severity of the symptoms. The disease assumes a decidedly intermittent character, and disappears in winter. The course and duration of the disease are as yet unknown. Anatomically, the redness can be defined as an erythema, but it is somewhat different in the erythromelalgie. A similarity has also been traced with the erythema exudativum multiforme.

According to the author, he bel eves it to be an angioneurosis, due to paralysis of the vaso-constrictors, and possibly an irritability of the vaso-dilators. The prognosis is uncertain, for up to date no deaths are on record. A rational therapeusis does not exist as yet. In the case mentioned here, Senator used the constant current and faradic electricity, as he believed, with decided success.

A modern Louisa Lateau was presented at this same meeting by Dr. Schimelbusch, assistant in Professor v. Bergmann's clinic. The patient, twenty-five years of age, had a large ulceration on her left mamma, the size of a plate; the origin seemed to be due to pricking the skin with a pin. The border of the sore showed new blisters, which interfered with the healing process. Transplantation of skin was unsuccessful. She was then strictly watched in v. Bergmann's clinic, and there was applied a tight-fitting plaster jacket on the thorax and arm. Transplantation now proved successful, although fungous granulations would not yield to the consecutive application of caustic nitrate. Besides, these blisters seemed to come on the neck, thorax, and arm. Only after gauze was made fast to the skin by means of photoxylin did the parts heal thoroughly.

According to the opinion of this surgeon, he believed it was a case of "hysterical self-injury," whose object consisted in being interesting to physicians. The clinical picture reminds one of the stigmata of the Catholic wonders in healing, especially, however, on the symptoms of the renowned case of Louisa Lateau, which created such a sensation in 1874.

Especial interest has been centred in the remarks of Dr. James Israel, one of Berlin's most prominent surgeons, in regard to kidney extirpation for the relief of malignant tumors affecting the same. Until now, the operative mortality for the relief of the above malady was about fifty-three to sixty-one per cent., so that for this reason the operation was laid aside. Israel, however, has performed this operation in the last few years 54 times. Of these 11 proved to be malignant tumors, and of the latter 2 died (or eighteen per cent.) as a result of the operation. Of the surviving ones 2 died, one after six, the second after thirteen, months of metastatic abscess. In the oldest cases, of which one is now five years and six months old (after operation), the result has been a cure.

This surgeon based his success on the early diagnosis of the tumors in question, which was by means of a careful palpation easily mapped out. In one case Israel was able to detect a tumor of the size of a cherry in a kidney which he presented, in which, on the inner half of the kidney, was a tumor of the size of a silver dollar, which was so well developed that although existing a short time, it had grown into the albuginea.

In the succeeding meeting of the Berlin Medical Society there followed a paper by Dr. Schlange, assistant of Professor v. Bergmann, on "Resection of Small Intestine (gangrenous)." This patient was admitted with symptoms of ileus, a high, convulsive, swollen abdomen, with distinctly palpable intestinal folds in the umbilical region. Diagnosis wass trangulation in ileus, next prompt laparotomy. A large black-colored piece of gut (small intestine) presented, with the mesenterium strangulated close to the vertebral column. After loosening the strangulation a portion of intestine, with its mesenterium extending a length of 135 c.c., was removed, owing to gangrene. The patient rallied from this heroic procedure and was discharged cured recently. This is probably one of the largest resections on record.

In the same meeting Dr. Ritter, one of our young bacteriologists, spoke of the etiology of pertussis. This speaker found that the disease was not localized in the upper portion of the larynx, but in the lower portion of the air-passages. He therefore proceeded to examine the bronchial secretions. He proceeded to obtain the secretion by receiving that which is thrown out by emesis at the end of the coughing spasm, and receiving it in one of his test-tubes. The sputum was then carefully worked with distilled water according to the recent (new) method of Koch, and from the resulting mass small flocculent pieces picked out for careful determination. After careful washing with a flow of water, this lentil-shaped piece of secretion was planted on sterile agar. After twenty-four hours colonies of diplococcus were found, which this investigator believes to be the cause of the pertussis. This diplococcus grows on agar of different compositions (*i.e.*, dextrose, plain agar), but does not grow on gelatine, potatoes, nor bouillon.

On the surface of the agar these colonies grow in a chain-like manner, seeming to run one into another, and have a grayish color, and can be easily removed.

This diplococcus is aërobic, and temperature optimum lies between 36° to 38° C. Below 30° and above 42° nothing grows. It stains very readily with basic and aniline dyes. In form, as also in biological relations, this diplococcus differs from all others, especially from the pneumococcus (Fränkel). The quantity of the bacilli seems to be in ratio to the intensity of the disease. The animal experiments are not all completed yet, but this investigator inflated the pure culture into cats and dogs, and produced attacks which were quite characteristic of pertussis.

Quite a sensation was created by Professor v. Pettenkofer in a recent announcement at the Munich Medical Society. His comments were on the question whether Koch's comma bacillus was really the cause of cholera or not. In order, therefore, to prove this, Professor Pettenkofer, and after him Professor Emmerich, introduced virulent cultures of cholera bacilli into their stomachs after having weakened the gastric secretions. Both gentlemen got along well without any harm after their experiment. This proved to Pettenkofer that the comma

bacillus does not produce the poison necessary for a cholera infection by its presence in the intestine. Pettenkofer then went into the history of previous epidemics, and found that the transmission of cholera could not be suitably traced to the existence of the comma bacillus. Then going to the Hamburg epidemic, which he characterized as explosive in character, he compared it to an epidemic in Munich. He decidedly disapproved of the drinking-water theories in regard to cholera. It had been universally accepted, but he knew of epidemics where drinking-water had never been thought of, and was not the source.

He insisted on statements made by him in 1885, at the Berlin Cholera Conference. He did not dispute the etiological importance of the comma bacillus, but believed that certain other factors were necessary to produce an attack of cholera. Finally, Pettenkofer mentioned certain precautions in the prophylaxis of cholera, and criticised them. It was first tried to prove the existence of a case of cholera, isolate it, disinfect thoroughly, and then believe that the locality was safe. This is false, for it is impossible to check the distribution and spreading of cholera bacilli. The best method would be the abandonment of the dwelling-places and their destruction. It is useless to prohibit travel, and it is only in those localities where an epidemic positively exists that congregation of the masses and marketings should be prohibited. That Germany tried to avoid intercourse from a contagious stand-point has proven an expensive experiment. The fear of the cholera bacilli is wrong, intercourse in houses where cholera exists is not dangerous.

Whatever may be said of the foregoing, which is contrary to the established doctrine of Koch, it is a decided scientific sacrifice on the part of this aged scientist to try such a serious experiment on himself.

These auto intoxications of these Munich scientists do not prove much, for numerous people are decidedly immune against cholera infection, or better, cholera intoxication. Here, as in numerous other cases, we are brought in contact with the relationship which the bacillus bears against the vital energies of the subjects, and about which we know nothing. It is, however, worth mentioning that Pettenkofer's ideas have numerons sympathizers in Berlin, especially in independent medical circles.

So, for example, might be mentioned the remarks of Professor Leyden, at the Society for Internal Medicine. He said that he accepted Pettenkofer's views, and stated that the representatives of bacteriological ways in medicine were entirely too dogmatic in their views. He said too much weight was laid on bacteriological methods, and clinical methods were put in the background. The same was true in regard to the prophylaxis in the late cholera epidemic. It was decided to neutralize and kill, if possible, the cholera bacillus in the patient, and try to prevent spreading of the disease by combating the bacillus within, and also without, the patient afflicted. In this many rights, which should otherwise have been bestowed, were taken away from the patient.

He finally reminded those present about his views, after the tubercle bacillus was discovered in 1882, when so much was mentioned in regard to the dangers of the tuberculosis, when he advised and warned against accepting all new views and theories as facts.

In each case the self infection of Pettenkofer and Emmerich will open a new era in the question of cholera which may bring considerable fruit from a hygienic standpoint.

Nostrums at the World's Fair.—Rule 15 of the pamphlet on Classification and Rules issued by the World's Columbian Exposition reads as follows: "Articles that are in any way dangerous or offensive, also patent medicines, nostrums, and empirical preparations whose ingredients are concealed, will not be admitted to the Exposition."

OUR CANADIAN LETTER.

(From our Special Correspondent.)

MEDICAL COUNCIL OF ONTARIO—RECIPROCITY IN MEDICAL REGISTRATION—TORONTO UNIVERSITY AND QUEEN'S UNIVERSITY MEDICAL DEPARTMENTS—A FREE JOURNAL—QUARANTINE PRECAUTIONS—AMALGAMATION OF CANADIAN AND AMERICAN MEDICAL ASSOCIATIONS—PERCENTAGE OF MEDICAL MEN TO INHABITANTS OF ONTARIO.

The Medical Council of Ontario has, during the past year, been subjected to a great deal of sharp criticism, and evidently the end is not yet. The object of the Council at its formation was no doubt merely to act as a licensing body, before which all graduates in medicine, after paying a fee of one hundred dollars, must appear for examination before receiving legal qualification to practise in the province of Ontario. A few years ago, however, some members of the Council conceived the idea of erecting an expensive building in the city of Toronto, where real estate at the present time is, on account of the untimely collapse of a boom, exceedingly flat. The building is a most elaborate structure and has many adornments, the most prominent one of which is a decoration in the form of a mortgage for an amount many consider more than the property could now be sold for. To meet this financial stringency the Council has received legal permission to levy an annual tax of two dollars on each medical practitioner in the province of Ontario, with authority to remove the name of any delinquent from the medical register who fails to make a prompt remittance before December 31st in each year. The result has been the formation of a strong association to protest against the extravagance of the Medical Council. There is little doubt that at the coming meeting of the Provincial Legislature a strong effort will be made to have some sweeping changes made in the Ontario Medical Act, and one of these changes will certainly be to have the Medical Council more largely composed of representatives elected by the medical practitioners of the province, instead of having it, as it now is, largely controlled by the university and college men. At present each university and each medical college in Ontario has a representative at the Medical Council. Many of the members are gentlemen having the best interests of the profession at heart, but unfortunately the machine element too largely prevails. No one denies the fact that the Medical Council of Ontario has done a great work for the profession in the province, and many regret most keenly that through financial matters so much sharp criticism has been provoked.

Nearly every province in the Dominion of Canada has now its own medical council, but it seems a peculiar anomaly that the license to practise in one province is not recognized in another. The question of reciprocity of medical registration between the provinces has excited a good deal of discussion, but so far no definite action has been taken in the matter. A medical practitioner of high repute, and a professor in a medical college in one of the older provinces, removed a few months ago to one of the western provinces of the Dominion, and wishing to engage in practice went before the board of examiners to procure registration. He found on that board one who had formerly been a student under his tuition in the East, and who did not hesitate by catch questions to expose the weak places in the applicant's knowledge of anatomy; and so successful was he that the former professor retired from the presence of the board chagrined with the announcement that he would have to try again. Medical registration is certainly looked after most carefully in Canada, and each province seems to be jealous of the other in carefully guarding its rights. There is danger, however, of carrying the matter too far.

The recent election to the Senate of Toronto University has occasioned among many of the medical graduates a most bitter feeling, that at the present time threatens to

impair the usefulness of the Medical Department of Toronto University. The cause lies largely in the undue ambition of a junior clique, whose efforts to remove from the faculty some of its most honored members have happily proved of no avail. There has also been an effort made to introduce the political machine, and work it for the advancement of those whom it seemed calculated to help. All these dissensions are greatly condemned, particularly by members of the profession in the Province, without whose support in the way of encouraging the attendance of students the Medical Department of Toronto University could not be maintained. Influencing students to shun an institution where such discord prevails would mean the shutting off of supplies. Several are now trying their hands as peacemakers, but with what result remains as yet to be seen.

The Royal College of Physicians and Surgeons of Kingston will hereafter be known as the Medical Department of Queen's University. This is one of the oldest medical institutions in Canada, and its many friends will wish it a long continued measure of prosperity in the new relation it will hereafter sustain to a university so well endowed as Queen's.

The Medical Council of Ontario, recognizing the fact that the imposition of an annual fee on all medical practitioners in Ontario was exceedingly unpopular, has entered into a contract with a Toronto publishing company to supply free to each medical practitioner in the province a monthly medical periodical, known as the *Ontario Medical Journal*. In consideration of an annual bonus of six hundred dollars paid by the Medical Council, each of the twenty-four hundred medical men of Ontario now receives every month a copy of the new journal, which is at least equal in literary merit to any other medical publication in Canada. It naturally commands a large advertising patronage, and on this account is said to pay its promoters handsomely. The proprietors of other medical journals naturally complain, as this innovation is likely to seriously interfere with their subscription lists.

The Canadian Government has demonstrated its anxiety to leave nothing undone in perfecting the quarantine regulations, and taking other precautions to prevent the entrance of cholera into the Dominion. The provincial boards of health have the confidence of both the profession and the general public. Expecting that the St. Lawrence route will be largely patronized during the coming year by visitors from Europe going to the World's Fair, extra efforts are now being made so that nothing will be left undone that would be likely to prevent the entrance of cholera to Canada. There was certainly the greatest need for reform, especially in the quarantine equipment of the lower St. Lawrence.

At the late meeting of the Canadian Medical Association at Ottawa many expressions were heard favorable to the proposed union of the American and Canadian National Associations. It will be remembered that at the meeting in Detroit, in June last, Dr. Reed, of Cincinnati, gave notice of a resolution to come up for discussion at the meeting in Milwaukee next year, in favor of the amalgamation of the American with the Canadian Medical Association, and thus establish a Continental Medical Association. Such a scheme has long been spoken of by the medical profession in Canada. No action has, however, been taken, it having been wisely considered best to await the action of the American Medical Association in the matter, and accordingly no public discussion on the subject took place at the recent meeting. The Canadian Medical Association, now in its twenty-sixth year, has accomplished a great deal of highly useful work that has proved scientifically beneficial to the profession in Canada. The feeling, however, has lately been gaining ground that a union, such as has been proposed, might be consummated with mutual advantage to the whole profession in America. Sir James Grant, at the meeting of the Canadian Association in Montreal last year, made an eloquent address strongly advocating the federation of the two associations, with annual meetings at which the medical profession of United States and Canada might meet for scientific investigation and discussion. Although thoroughly British in his political sentiments, Sir James, as one of the leading members of the profession in Canada, has wisely concluded that political divisions must never prove a barrier to the most harmonious union of those forces which have for their object the promotion of the scientific welfare of medicine. The cities of Montreal and Toronto would be glad to welcome the meeting of the united associations, and many Canadians hope that the action of the American Medical Association in the matter will be favorable to an early and harmonious union of the two associations.

There are now twenty-four hundred legally qualified medical practitioners in the province of Ontario, which, according to the last census, would give one medical man to every nine hundred of inhabitants.

THE STERILIZATION OF CATGUT.

To the Editor of the Medical Record.

Sir: In reading Dr. Dowd's article in the issue of December 3d, upon "An Apparatus for the Sterilization of Catgut," it has occurred to me that it may be of benefit to some surgeon who should desire to prepare catgut by boiling in alcohol, and did not possess the necessary condenser, to be informed of a plan of condensing which I have used in the New York Cancer Hospital, with most gratifying results as regards the sterility of the gut. The gut is wound raw upon a large spool (about two inches diameter, and four or five inches in length), the spool to be solid so as to sink. The size of the spool I mention as important, from the fact that you get sufficient length wound without causing the layers to be more than three, or at the most four, deep. This spool is immersed in absolute alcohol, and the jar containing it set upright in the hot water (which should at least be on a level with the alcohol); a good sized piece of ice is then placed upon the top of jar, and as the alcohol vaporizes, it rises to the cool top, is condensed, and falls back into the jar. After boiling for thirty minutes the jar is removed, the cover securely fastened, and kept for use. I have never seen bad results arise from gut prepared thus, and have prepared as heavy as No. 8, which was used in tying the stumps in oöphorectomies.

Yours truly,

Jay O. Nelson, M.D.

3501 Wabash Avenue, Chicago, Ill.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending December 17, 1892.

	Cases.	Deaths.
Typhus fever	3	2
Typhoid fever	15	7
Scarlet fever	103	14
Cerebro-spinal meningitis	2	3
Measles	120	16
Diphtheria	94	34
Small-pox	0	1
Cholera	0	0
Varicella	0	0
Pertussis	0	0
Erysipelas	0	0
Leprosy	0	0

Female Physicians are scarce everywhere except in the United States. There are only seventy in London, five in Edinburgh, two in Dublin, thirty-five in Paris, one in Algiers, and two thousand in the United States.

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Original Articles.

THE LOCALIZATION OF THE ACTION OF REMEDIES UPON THE BRAIN BY INTRA-NASAL MEDICATION AND COMPRESSION OF THE INTERNAL JUGULAR VEINS.

By J. LEONARD CORNING, A.M., M.D., Etc.,

NEW YORK.

In the light of what has been and is still being accomplished by the topical use of chemicals in the treatment of the most diverse morbid conditions, I fancy that few will deny that the judicious extension of the principle is an object worthy of one's efforts.

To enumerate what has been done in this field would involve nothing less than a recapitulation of all that has been achieved by local antisepsis, local anæsthesia and the topical use of remedies in the various medical specialties. Thoughts of these things are freighted with suggestions, of a practical kind too, let me add, or I should not have recalled them. When one considers to what meagre practical results some of the fashionable generalizations of recent pathology have conducted us; and when over against this poverty of achievements one places what has been attained by the localization of the effects of medicinal substances, I believe the most sceptical therapeutist will not only acknowledge, but gladly acknowledge, how substantial have been our acquisitions. It may as well be admitted, however, at the very threshold of these reflections, that the concentration of the effects of chemical solutions upon the internal organs is beset with difficulties, insurmountable ones too, in many instances. Thus one reads in the journals from time to time accounts of injections of medicinal fluids into the parenchyma of the lung, or other important viscus, but the thought at once occurs that these fluids can at best produce but evanescent effects upon neighboring morbid products; for they—the fluids—are soon carried away to distant parts of the organism by the circulation; and being thus dissipated, their local remedial effects are proportionately attenuated.

There is, however, one organ which is exceptionally well placed with respect to the possibility of concentrating the action of remedies upon it; I refer to the brain, and more especially the cortical layers of the cerebrum.

To appreciate how true this is, it is necessary to place in juxtaposition the following facts:

1. That the main blood-supply of the cortex is contingent, or largely contingent, upon the unobstructed flow through the carotid and jugular vessels. Hence, when the blood flow in one or both of these sets of vessels is arrested, or even partially arrested, as by compression, cortical function is directly interfered with, as is shown by the confusion of ideas, stupor, and even unconsciousness engendered.

2. It has long been known—and the fact has frequently been commented upon in medical literature—that chemicals applied, especially in a fluid state, to the lining membrane of the nasal cavity are speedily absorbed, producing in this way characteristic physiological effects. Thus calomel has been blown into the nose, producing in a short time severe salivation.[1] Narcotic substances, and more especially morphine and cocaine, have also been spread upon the mucous membrane of the nasal cavity, giving rise in a short time to characteristic phenomena. I am told that the effects thus induced upon the central nervous system, and more especially the brain, by the use of the last-named drug are familiar to rhinologists.

The most reasonable and generally accepted explanation of the prompt action of narcotic substances when used in this way is that which assumes that the absorption of the remedy—or at least the greater part of it—takes place by the way of the vessels which penetrate the lamina cribrosa. If we admit the plausibility of this hypothesis, we shall then perceive that remedies administered by way of the mucous membrane of the nose must reach the brain, and especially the cortex cerebri, in a more concentrated state than when administered at a distance, either hypodermically, per rectum, or by the stomach. Even though the amount of medicinal substance absorbed be not great, its increased concentration at the seat of influence (the brain) must of necessity result in physiological effects out of proportion to the quantity of chemical involved.

Here we have an explanation, and I think a true one, of the remarkable cerebral symptoms often produced by exceedingly small quantities of medicinal substances when applied in solution to the eye and conjunctiva.

3. It is a fact that, if narcotic fluids be introduced into the nasal cavity in the manner previously set forth, and if shortly thereafter the flow of blood in the jugular veins be considerably retarded by the application of pressure at a suitable point in the neck, the effects of the remedies thus administered may be appreciably enhanced and prolonged. This accords with all that I have been able to ascertain respecting the behavior of remedies when brought in contact with the peripheral nerves, by hypodermic injection, and maintained there by occlusion of the capillaries, or by constriction of the artery, veins, or both, above the point of injection (next the heart). These preliminary observations will, I trust, make the principles involved abundantly clear to any physician of average intelligence. Let me pass, then, at once, to the description of the simple procedure which I have found most serviceable in giving practical effect to the principles above enunciated. The first step of importance is the introduction of the remedy by way of the nose. To do this most effectually the mucous membrane should first be cleansed with warm water, the latter serving at the same time to expand the capillaries. The medicament (morphine, cocaine, atropine, etc.) may then be introduced in solution through the nostrils by the aid of an ordinary medicine dropper or atomizer. This simple manipulation is best accomplished while the patient reclines upon his back.

After the lapse of ten or fifteen minutes the second step may be proceeded with. This consists in materially restricting the lumen of the internal jugular veins by the application of pressure.

After numerous trials, I have found that the jugulars are best compressed by the application of small dry cups over the course of the vessels, one at each side of the neck on a level with—or a little below the level—of the thyroid cartilage.

The cups, which are joined together in front by an adjustable steel band, are about two inches long and half an inch wide; they are made of metal—silver or steel—and

[1] De l'Administration des Médicaments par l'intermédiaire de la Muqueuse des Fosses nasales; par Rainbert, Journal de Médecine de Chirurgie et de Pharmacologie, Bruxelles, 1867, vol. xlv., p. 17, seventh line from top of page.

are held in place by an elastic strap, which passes around the neck and is secured in place behind by the aid of a simple buckle (Fig. 1). The open side of the cup is, moreover, somewhat concave in an antero-posterior direction, which admits of elevating the veins and surrounding tissue more effectually In this way it is possible to draw the vessels into the cups, partially at least, thus causing the edges of the latter to act energetically upon the lumen of the veins. The little dry cups being maintained in position over the vessels by the aid of this simple band, the air contained in them is rapidly exhausted by means of an air-pump and vacuum-chamber, which exert their influence upon the interior of the cups through the intermediation of small, non-collapsable india-rubber tubes (Fig. 2).

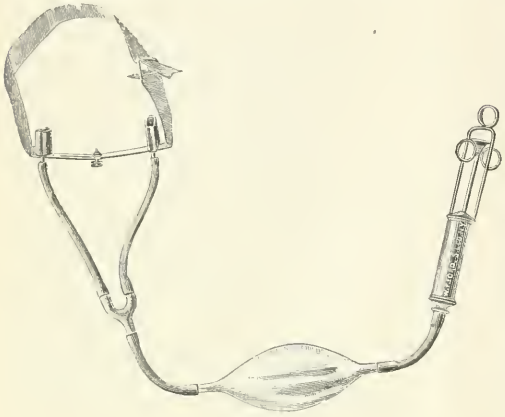

FIG. 1.

It is self-evident that the cohesion of the compressing apparatus thus obtained, as well as the elevation of the tissue within them, render valuable assistance by preventing the slightest displacement of the subjacent vessels. In a word, the veins, instead of being compressed in a backward direction, are, as previously pointed out, drawn toward and compressed by the edges of the cups. When all is properly adjusted, the elastic bands previously described may be tightened at will, thus adding mechanical to atmospheric pressure. This last step is usually, however, unnecessary, the atmospheric pressure being adequate.

When slight vertigo has been induced in this way, the evidence is conclusive that the stasis of the intracranial venous circulation is sufficient for therapeutic purposes.

There is no special limit to the length of time during which compression may be continued; but from what I have been able to determine, I should fancy that from twenty minutes to half or three-quarters of an hour are sufficient.

Illustrative Cases.—The following cases are cited with a view to illustrate the facility and rapidity with which a variety of disagreeable sensations in the head, including minor degrees of pain and depression, are relieved by resort to this simple procedure.

Mr. A. C—— was referred to me over three years ago by Dr. C. H. Avery, on account of "severe and persistent headache." When I first saw him the headache was diffuse in character, continuous, but not specially severe. He informed me, however, as I find by reference to my case-book, that at times he is afflicted by sudden and very severe exacerbations of pain; and that, at such times, the pain is almost entirely confined to the occipital region. There is very little difference between the pain felt at night and that experienced during the day.

There are no ataxic symptoms; the disks of both eyes are normal, but the pupils are quite uneven, the right one reacting little or not at all to strong light. I sent him to Dr. David Webster for an opinion, who wrote me that there was undoubted "paresis of the right sphincter iridis, without paresis of the ciliary muscle." A high degree of hypermetropia was also present, for which Dr. Webster prescribed the necessary glasses, to be worn constantly. Incidentally he also expressed the belief, in spite of the absence of a specific history, that the mydriasis, and probably also the headache, were due to nervous syphilis.

My own suspicions having taken a like direction, I placed him at once upon large doses of the iodide of potash, which were gradually increased to the point of tolerance.

After several weeks there was appreciable diminution of the pain, so much so that after three months his visits were discontinued. A year or two later I saw him again, and he stated that he was often free from pain for prolonged periods—from several days to three or four weeks.

The paresis of the right sphincter iridis was also apparently improved, though the contraction of the pupil was quite sluggish.

So far as my case-book reveals, I did not see him again till October 19, 1892, when he called at my office, complaining of an unusually severe paroxysm, the predominantly painful area being located in the frontal region. This seemed a good opportunity of testing the above method of locating the action of remedies upon the intracranial structures.

Accordingly I placed the patient upon his back, injected into both nostrils, as high up as possible, several drops of a medicated solution, aggregating morphine $\frac{1}{8}$ grain and atropine $\frac{1}{100}$. Ten minutes later, there being as yet little diminution of the pain, I compressed both jugular veins in the manner previously set forth.

FIG. 2.

The relief thus afforded excited the wonder of the patient, who declared, after the lapse of five minutes from the time of applying the compression to the jugulars, that he "felt no pain."

Later he informed me that the relief thus obtained was unusually prolonged, there being little or no pain exper-

ienced during the entire following week. I shall have something to say regarding the subsequent history of this interesting case, at some future time. My object in citing it on the present occasion is merely to show how promptly a relatively severe frontal headache was relieved by medication by the nose, combined with simultaneous compression of the internal jugulars.

Mrs. E. N. T—— was referred to me by Dr. Charles A. Limeburner for severe, continuous local headache, possibly the result of circumscribed chronic meningitis (?).

Five months ago, while walking in the garden, patient stepped upon the prongs of a rake, which had been allowed to remain in an upright position, so that the handle leant against a wall. The result of this action was to cause the implement to fly forward, inflicting a blow of such severity upon the left side of her head that she fell to the ground in a state of partial or total unconsciousness.

On regaining consciousness, she felt nothing more than the soreness which might naturally have been anticipated from the violence of the contusion. In a few days, however, quite severe pain set in, the painful sensations being deep-seated and corresponding quite accurately with the area of traumatism, *i e*, the left parietal region.

As the pain was not relieved by extracranial measures, and as the various coal-tar derivatives did not seem to help her much, or, at all events, but slowly, I decided to endeavor to act more directly upon the intracranial structures by invoking the method of medicinal localization previously described.

Accordingly, while the patient lay on her back, I sprayed into her nostrils morphine, gr. $\frac{1}{8}$; atropine, gr. $\frac{1}{250}$. Ten minutes thereafter, patient experiencing little relief, I applied the pneumatic compressor over the jugular veins, with the result that, within five or six minutes from the moment of its adjustment, there was complete cessation of pain. Here, again, we have conclusive proof of the increased physiological potency of medicinal solutions, when they (the solutions) are made to linger in the tissue of the brain or other portion of the central nervous system by the aid of artificially induced stasis or partial stasis in the capillaries. Such stasis may be induced in three ways—and I have tried them all—first, by compressing the carotids; secondly, by compressing the jugulars; and lastly, by compressing both the arteries and veins. Compression of the jugulars with the least possible interference with the circulation in the carotids, will alone be discussed on this occasion.

Compression of the jugulars by the aid of the pneumatic compressor, as here described, is not difficult, especially when the patient reclines in a dorsal position, the head being thrown slightly backward so as to place the vessels slightly on the stretch. This procedure may be invoked without hesitation in the treatment of individuals under forty years of age.

In elderly persons, on the contrary, where an atheromatous condition of the cerebral blood-vessels is among the possibilities, it will be well either to abandon this mode of treatment, or to compress both arteries (carotids) and veins (jugulars) at once, thus avoiding an increase in intra-arterial pressure and consequent danger of rupture and hemorhage.

Mr. V. N——, also kindly referred to me by Dr. Charles A. Limeburner, has suffered for several months from what Dr. Limeburner believes, and rightly, I think, to be neursathenic headache.

The chief complaint of this gentleman is that he is beset by a sensation of heaviness in the head, more or less continuous, and frequently coupled with dull pain at the vertex and profound depression. In addition to these symptoms, he also evinces dread of responsibility and society, loss of memory, especially for recent events, inability to concentrate his attention for any length of time without discomfort; and, in short, he affords a typical illustration of the classical form of cerebral neurasthenia.

With a view to at once gain his confidence by relieving his head symptoms—the vertical pain, the heaviness, and the depression—I proceeded to invoke once more the aid of medicinal localization.

Instilling into the nasal cavity a few drops of water containing atropine, $\frac{1}{100}$, and cocaine, gr. $\frac{1}{4}$, I applied the pneumatic compressor, as already so frequently described. After the lapse of five or six minutes there was a decided feeling of relief, and in ten or twelve minutes the disagreeable head symptoms had entirely disappeared. The relief in this case was complete during the following five or six days, when the procedure was again repeated, with the same results. As a matter of course, various measures directed to the removal of the exciting cause were employed in this as in all similar cases, but as they have no bearing on the point at issue, and involve, moreover, matters which are part of the common knowledge of the profession, I have made, and shall in future make, no detailed reference to them. As a matter of theoretic interest, I may observe that, after instillation of the atropine and application of compression to the jugulars, there was marked dilatation of the pupils.

Mr. J. E. K—— has been kindly referred to me by Dr. Fayette Smith, on account of an obstinate form of myalgia. He also suffers from attacks of mental hebetude, depression, and headache. During one of these seizures, which failed to yield to either salol and phenacetine, or antipyrine and ammonia, I instilled into his nostrils morphine, gr. $\frac{1}{8}$, atropine, gr. $\frac{1}{100}$, and hyoscine hydrobrom., gr. $\frac{1}{300}$, and shortly thereafter applied the pneumatic compressor to the jugulars.

As a result all the disagreeable symptoms disappeared within ten or fifteen minutes, much to the delight and astonishment of the patient, who had hitherto failed to obtain relief from several remedies administered in the conventional manner.

Mr. L. E—— has been referred to me by Dr. David Webster, on account of paralysis of the third nerve, with concomitant headache, both phenomena being doubtless specific in origin. Dr. Webster has already obtained some amelioration by the administration of the iodide of potash combined with inunctions of the oleate of mercury. As, however, there is still considerable diplopia, Dr. Webster feels that local applications of electricity should be tried. Accordingly, I have made such applications (of faradism) as near the vicinity of the affected muscles (left internal and inferior rectus) as possible, employing for the purpose a delicate conical sponge electrode.

The benefit accruing from this phase of treatment has been rapid, the double vision having quite disappeared after the third application. I may add, in this connection, that the eye was thoroughly cocainized before applying the electrode, the lids being held apart by an ordinary eye-speculum.

And this brings us to the point of special interest in connection with the present argument. As has already been said, this patient was a sufferer from headache of a persistent, dull character, culminating, at times, in exacerbations of considerable severity.

At my request he called at the office during one of these attacks, and I proceeded at once to attempt to abolish the painful symptoms. Spraying the nasal cavity with an aqueous solution of morphine, gr. $\frac{1}{8}$; cocaine, gr. $\frac{1}{3}$; and hyoscyaminæ sulphas, gr. $\frac{1}{100}$, I had the patient remain in a recumbent position for ten or fifteen minutes. At the end of this time, he stated that he felt "somewhat better;" but, as the relief was not complete, I at once applied the pneumatic compressor to the jugulars, when the patient almost immediately declared that all pain had vanished.

Mrs. C. L. V—— was referred to me by the late Dr. James R Leaming, on account of persistent insomnia, accompanied by attacks of dull, clawing pain at the vertex. As the patient was much debilitated, and as changes in position —and notably lying down and suddenly sitting up—had a perceptible effect upon the character of the pain, I concluded that circulatory anomalies, probably anæmia, had

something to do with its genesis. Accordingly, I applied the compressor to the jugulars, with the result that considerable relief was at once afforded. This improvement was, however, evanescent; for, on removal of the compressor, it shortly returned.

I then proceeded as in the previous case, instilling at first the analgesics and sedatives into the nasal cavity, and then applying the compression to the jugulars. Precisely the same results were obtained as in the previous case—relief from pain, lasting several hours.

This case is interesting, as it affords incontestable proof of the superiority of jugular compression combined with intranasal medication over jugular compression alone.

Mr. G. F—— was referred to me several years ago by the late Dr. Cornelius R. Agnew, on account of spinal neurasthenia, accompanied by impairment of sexual vigor and insomnia. For several years patient had been harassed by imperative craving for alcoholic stimulants, the morbid desire occurring periodically, twice or thrice yearly. The excesses which resulted from these impulses always left the patient tremulous and greatly prostrated, and eventually he became a victim of obstinate and constantly recurring headaches, in addition to the symptoms which had more especially attracted Dr. Agnew's attention. The eye conditions bore no special relation to the case, consisting as they did in a minor degree of hypermetropia and conjunctivitis. Appropriate glasses had corrected the first, and a simple eye-wash the second element, so that when he arrived at my office the nervous phenomena were the predominant, and indeed the only, feature. These I was able to abate by a course of treatment of reasonable length; but I was not able to overcome the patient's imperative impulses to periodic spreeing.

Thus it happened that, for the last few years, this gentleman has been in the habit of seeking me out, after one of these debauches, with a view to having the results—the head pains, the tremor, the depression—eliminated. Recently he called upon me for the usual purpose, suffering, as he declared, more than on former occasions. Especially annoying was the sensation of fulness and pain in the head, which made him feel, as he expressed it, "as though he would like to jump off the dock." This seemed a good opportunity to endeavor to relieve the pain by concentrating the effect of the remedies employed by the aid of jugular compression.

As the patient was a sufferer from an old catarrhal difficulty, which had evidently deprived the nasal mucous membrane of much of its absorbent power, I decided to administer the remedies by the mouth. I quite realized that in doing this, I was resorting to a method inferior to that previously described, when judged by rigid physiological standards; for these demand the placing of the medicament as near the nervous structure to be affected as possible. However, I could not help feeling that the retardation of the medicated blood in this way would eventuate in some enhancement of physiological effect, and the sequel proved that the inference was a correct one.

As a preliminary precaution, the patient was given forty drops of the aromatic spirits of ammonia, and shortly afterward fifteen grains of antipyrine were administered. Though the ammonia, being quickly absorbed, induced a considerable increase in the frequency and vehemence of the heart's action, there was no abatement in the head symptoms—the pain, hebetude, and depression—even after the lapse of half an hour. And yet there was some diaphoresis, showing that a considerable quantity of the antipyrine had been absorbed.

It was at this juncture that I applied the pneumatic compressor to the jugulars in the usual way.

The phenomena thereby evoked appeared within five minutes and were truly remarkable, if credence is to be given to the patient's own statements. He declared that the heavy feelings in the head had disappeared; that he no longer felt pain; that the depression had entirely relinquished its hold upon him; and that, in a word, he was "cured," as he laconically expressed it.

Commentary.—Obviously, the plan of treatment just described has distinct advantages; for, when the nasal mucous membrane is sufficiently healthy to absorb the medicament, the stomach, if delicate, may be spared the reception of chemical products which might add to the local derangement. Powerful alkaloids are those best adapted to this form of administration, as they may be given in small doses, and are, therefore, readily taken up by the nasal mucous membrane, whose power of absorption is limited. Again, there is little or no danger of setting up a pernicious habit, as is the case in hypodermic exhibition. Then, too, the prompt relief of intractable symptoms in a relatively short time, and without inordinate drugging, is a notable advantage. Finally, I would add that where the nasal mucous membrane is not sufficiently healthy to absorb the medicated fluid in sufficient quantity it may be injected into or beneath the intranasal mucous membrane by the aid of a long hypodermic needle attached to the syringe conventionally employed. This I have done on one occasion, only.

53 West Thirty-eighth Street.

HOW AMPUTATION OF THE BREAST FOR CARCINOMA SHOULD BE PERFORMED.[1]

By ROBERT F. WEIR, M.D.,

Professor of Surgery, College of Physicians and Surgeons, New York.

The subject upon which I wish to speak to-night is an extremely trite one, and I can add but little of novelty to it. Nevertheless I think the experience of every hospital surgeon will bear me out in this, that while the removal of the female breast for carcinoma is an operation that is frequently undertaken by the ordinary practitioner, in a large number of instances it is done in an imperfect manner. Either the operator will content himself with the removal of the tumor, together with a moderate portion of the adjacent mamma, or he may more thoroughly take away the entire breast with the tumor. He seldom, however, opens and examines the axilla, and still more rarely does he enucleate this space of its fat contents and glands, which are estimated to be invaded in ninety-seven per cent. of mammary carcinoma. This latter omission is especially true in those instances where, prior to the operation, no glandular enlargement can be detected, even after repeated and careful examinations. That this inference is erroneous has been demonstrated many times by surgeons. Experience has decisively shown that such an examination is not a reliable one; that even the opening up of the inferior portion of the axilla, after the breast has been removed, and the introduction of the finger under the skin into this space is not sufficient in many instances for the detection of involved glands. The discovery of enlarged glands in the axillary fat has been so frequently found by me in cases where no evidence of the existence of such could be felt prior to the operation that I speak with positiveness on this subject. In fact, according to the carefully observed cases of Schmidt, at Küster's clinic in Berlin, twenty-six per cent. of the cases not presenting, previous to operation, axillary involvement to the usual palpation revealed enlarged glands at the time of operation.

Passing on further, and as briefly as possible, as my time is limited by your President, the following may be stated almost as axioms:

First. That every mamma in which a cancerous nodule exists is already very extensively diseased—perhaps *in toto*.

Second. That secondary infections take place either through the axillary glands and lymphatics, or through the adjacent skin; or, lastly, through the retro-mammary fat and fascial tissues alone, or in addition through the lymph-vessels of the pectoral fascia and of the pectoralis major muscle itself.

[1] Read at the Meeting of the County Medical Society, held November 28, 1892.

From these facts it is equally evident that the whole breast must be removed, and that the section through the skin must be made wide of the growth, irrespective of the formation of a line of subsequent union; also, that the axillary contents should be thoroughly cleaned out; and finally, and perhaps most important, if the disease extends to the depths of the gland, that the pectoral fascia, and generally a portion of the pectoralis major muscle itself must also be removed.

The usual incision, starting on the arm at about the insertion of the pectoralis major muscle with the humerus, is carried along the lower edge of this muscle rather than in the axilla itself, and encircles the breast below and above the tumor. Dissection through the subcutaneous fat will now, by turning back the separated skin, easily expose the mamma *en masse*. These incisions, I repeat, should always be planned on the basis of going wide of the affected part. Unluckily we have no way of determining how far away this section should be, or how much of the skin tissue of the breast should be sacrificed. Two procedures have been suggested, one of which has been in use for some time, to aid the surgeon in this endeavor. The first is, by the aid of a competent assistant, to make at the time of the operation a frozen microscopic section of the diseased skin tissue nearest the carcinoma, in order that the operating surgeon might be informed before the close of his work whether or not he may have taken away a sufficient amount of the skin and other tissue. This has been resorted to for some time past by myself, as well as by other surgeons, and the delay in the operation has been so trifling that its advantages more than counterbalanced this defect.

The second method, which I can only allude to, for my own experience has been confined to but a few cases, is that suggested by Stiles, of Edinburgh, and it is this: To immerse the amputated breast, previously washed in water in order to remove the blood, in a five per cent. watery solution of nitric acid, and to leave it there until the operation of cleaning out the axilla has been accomplished, say ten minutes. It is then washed again in water. By this time such alterations will have taken place from the action of the nitric acid on the normal tissues as will render them semi-translucent, while the carcinomatous patches will remain opaque. This ready method has been endorsed by Professor Chiene and by Messrs. Woodhead and Brooks.[1] Moreover, since we have learned that the large gaps, particularly such as are frequently left after the free removal of the mamma, and which are often so extensive that the edges of the skin cannot be joined again together, can be satisfactorily and promptly closed by Thiersch's method of skin-grafting from the thigh, there need be no hesitation on the part of the surgeon to sacrifice more of the skin than has heretofore been done. This is an important point, because it is admitted by all that the recurrences are most common, viz., seventy per cent., in the skin and in the tissues near the site of the original infection. It is for the further avoidance of this recurrence, for in the axilla recurrence is rare—less than two per cent.—that, in addition to the liberal removal of skin, Heidenhain, of Berlin, has proposed that always in the deep involvement of the mamma, or when the retromammary fat or tissue is invaded by the neoplasm, not only these tissues should be widely removed, but that a goodly portion of the pectoralis major muscle itself in the mammary region—in his own words, "a continuous layer of the muscle substance"—should be cut away. This I can testify can be done to an extensive degree, either without after-impairment in most cases, or, in rare instances, with extremely slight impairment of the function of the arm. In one case I recently removed nearly the entire pectoralis major muscle, and subsequently the patient only felt some very moderate inability to press the opposite deltoid region as firmly as before.

So far all is plain sailing, even for a beginner in surgery. The entire breast, and its probably subjacent affected tissue, has been freely removed, let us say. The hemorrhage resulting is easily checked by clamps, which can be left on till the rest of the operation is completed, and by this means alone all bleeding will probably be controlled. If not, torsion will generally accomplish the end aimed at, and only rarely will a ligature be required. The clearing out of the axilla, which next should be done, is not a difficult procedure either, providing certain rules that are now commonly followed by surgeons are employed, the principal one of which is that the axillary vein should be exposed at the beginning of this procedure. This bugbear to the young surgeon is easily overcome, thanks to Bickersteth's and Volkmann's directions. These are in substance as follows: After the original incision through the skin and subcutaneous fat previously described (which can, however, be altered in the mammary portion according to the various situations of the carcinomatous growth) has been made along the line of the pectoral muscle and the diseased breast properly removed, there will be seen, just below the lower border of this muscle, in the axilla, a thin layer of fascia which is readily recognized (Fig. 1). This

FIG. 1.—Axillary Fascia.

axillary fascia can be further exposed, if necessary, by a moderate dissection along the posterior edge of the incision up to the latissimus muscle. A few touches with the knife will now set plainly into view nearly the full width of the axilla, hemmed in by this layer of fascia, which stretches from above the vessels and is adherent anteriorly to the whole external border of the pectoralis major muscle. The position of the artery underneath it is not seen, but it is readily felt, and below this point an opening is made in the fascia either by a touch of the knife or by tearing through it with the end of a blunt pair of scissors, whereupon it can be divided through a distance of two or three inches up to the pectoral border. The fat beneath gently being torn through with the finger, or the end of the scissors, will immediately reveal the blue, large, axillary vein. This having been cleared of the loosely adhering fat, though sometimes adhering glands complicate the manœuvre, the anterior attachment of the fascia along the pectoral muscle is then divided throughout, from above downward, and the fat of this space, working from the vein downward and outward, is, as a rule, readily dissected out from this cavity. Usually a few small veins and several thoracic nerves will traverse the mass of fat, and these are generally sacrificed. The intercostal humeral nerve, also stretching across the same, generally demands its severance, though, as in some cases where but slight glandular involvement is met with, this can be spared. Following in this way along the chest-wall, one comes, proceeding backward, down to the

[1] Medical News, October 31, 1891; British Medical Journal, May 7 and 14, 1892.

subscapular muscle and to the subscapular vein as it runs into the exposed axillary vein. Here will be found, adjacent to this vein and running from above downward and outward, the subscapular artery, and, what is of great importance to us, as shown by Küster, of Berlin,[1] the second subscapular nerve (Fig. 2). This, it is very desirable, should be spared from injury, for it and the third subscapular nerve, not often seen in these operations, and lying more to the outside, supply the teres major and latissimus dorsi muscles. Its incautious severance is a common cause of the subsequent inability to raise the arm after these operations. It is easy to avoid damaging it, when once on the lookout for it.

In this way the axillary fat, sparing this nerve, can be enucleated from the subscapular muscle up to the edge of the latissimus dorsi muscle, where a few snips of the scissors or cuts with the knife will sever the axillary fat from its posterior and outer attachments in such a manner that it can be removed *en masse* with the fat tissue of the previously detached breast. Individually, however, I prefer to remove the breast completely as the first step of the operation, and then to take out the axillary fat. After the removal of the fat and gland

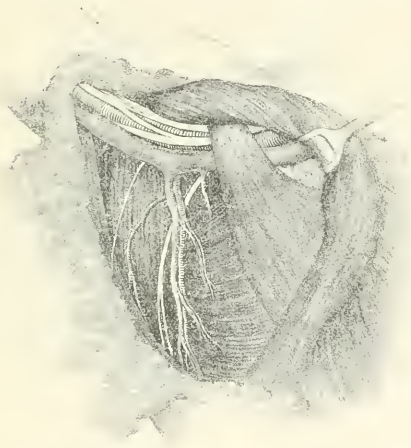

FIG. 2.—Showing the Second and Third Subscapular Nerves, with the axillary contents turned outward, and also the exposure of Mohrenheim's subclavicular space. The axillary artery and nerves are not bared however during a mammary amputation.

from the axilla there will be left quite a pocket, at or near the bottom of which, and posteriorly, it is wisest to make a drainage opening.

Should an involvement of the vein wall be discovered one should not hesitate to sacrifice the vessel by removing the diseased portion after ligating above and below the affected part. Should, by any mishap, the rare accident of damaging the otherwise healthy vein take place, it is best closed, if a very small opening, by a lateral ligature; if an opening of any size exists, its closure is best effected by several interrupted silk sutures.

To lend further security to the clearing out of the axilla, an expedient which I have employed now for many years, should, in my judgment, be always resorted to. It is, to explore higher up in the axilla that space called by the Germans Mohrenheim's, represented also in Fig. 2, and situated just below the clavicle. This is accomplished by separating with the fingers the cellular plane between the pectoralis major and pectoralis minor muscles, until the clavicle is felt, and then by flexing the arm somewhat upon the chest the pectoralis major muscle itself is lifted up by the fingers of an assistant or by a retractor. By so doing, this space, containing the axillary vessels and a small amount of fat, is readily exposed to view and to palpation. In it will often be found, if enlarged glands have been met with in the axillary fat, one or more small-sized carcinomatously involved glands. With the fingers, and sometimes the end of a curved blunt scissors, not by cutting, this fat can be entirely removed. If any difficulty in so doing occurs, the finger passed underneath the pectoralis minor muscle will crowd this fat sufficiently forward to bring it entirely within the control of the surgeon. I venture to repeat that this is a region the exploration of which I have for a long time insisted upon as being of great importance. Its investigation has not usually been dwelt upon, but I cannot but feel that its systematic examination will lend additional security to the patient. The separation of the two pectoral muscles likewise often reveals a diseased lymph-vessel running alongside the cephalic vein.

The drainage-tube, preferably a glass one, is carried in through the skin opening, either under or above the pectoralis minor muscle, and the wound then closed throughout by a few silk-worm-gut sutures, to which is added multiple sutures of the finest silk. Occasionally iodoform gauze is substituted for the drainage-tube—for drainage-tubes do not drain long, as they soon get choked up and the exit of the wound secretion is generally, after a few hours, only accomplished by the space outside the drain. Careful pressure of the replaced flaps of skin, if they come together, is made by wet or dry aseptic towels, or otherwise, during the suturing. The accumulation of blood and the formation of a blood-clot is not encouraged. The customary antiseptic dressing is applied and secured by broad canton flannel bandages, and finally fixation of the arm and forearm is carried out as thoroughly as possible.

An operation thus conducted, though much larger than is usually planned, is singularly free from mortality. Of one hundred and twenty-five primary operations conducted in this manner I have not had a single death. In seventy cases operated upon by the older methods I have had two deaths, one from thrombosis of a damaged axillary vein, and the other from erysipelas. Dennis, in seventy-one cases, had but one death. Schmidt's later cases showed but two per cent. of mortality. As to the effect of such or similar thoroughness as this upon the ultimate results the figures presented are encouraging. Twenty per cent. of the cases operated on are reported by Schmidt as cured; twenty-five per cent. of similar cures are given by Dennis. My own data give me in sixty traced cases nearly twenty per cent. of cures. By this is meant that no recurrence has taken place within three years from the date of the operation, a generally received indication of a permanent successful result though not an absolute one. The very late recurrences, such as are occasionally met with, which I have seen, for example, in one instance, taking place sixteen years after the operation, in another case twenty years after the operation, are to my mind more likely to be explained in view of the increasing probability of the protozoal origin of cancer by a reinfection than by a recurrence of the primary disease.

Centralblatt f. Chirurgie.

An Optimist at Last.—In the last number of the *North American Review*, Dr. T. D. Crothers discusses the question, "Is alcoholism increasing among American women?" He decides that inebriety among women is on the decrease. The great majority of cases of drunkenness in females are seen in connection with profound physical and mental degeneration. Female drunkards are "the mere wreckage of worn-out foreign families far down on the road to race extinction. . . . Drunkenness, prostitution, and lawlessness of all forms in women are unmistakable signs of disease and early dissolution. Only a small minority of American women are found at this level. On the street at nightfall, in large cities and low circles, a certain number of inebriate women may be seen; but these are largely demented beings of foreign birth, paupers in mind and body."

THE TREATMENT OF ULCERS BY STRAPPING.

By CHARLES E. QUIMBY, M.D.,
NEW YORK.

JUST one hundred years ago a good surgeon of Bristol, England, Baynton by name, gained more lasting glory than falls to the lot of most medical men by describing a new method of treating ulcers by the use of adhesive straps. After the lapse of a century it seems permissible, without evincing disrespect for things ancient, to suggest that his method, although to-day given without essential modification by all surgical authorities, may possibly be improved upon. In extenuation of my own digression from work essentially medical I can only plead an inherited love of all things mechanical and an early surgical training.

Fourteen years ago, on entering a surgical service in Bellevue Hospital, I received the honor, with a pride many will appreciate, of having placed under my sole care the usual goodly number of old stock ulcers, after due instruction in established methods of strapping.

For many weeks these same old sores received more faithful attention than often falls to the lot of such cases. As time wore on, however, while the ulcers mostly failed to wear off, neither youthful enthusiasm nor a reasonable sense of duty sufficed to gild them with the rosy hues of earlier days. An attempt to make practical the results of some self questioning as to what indications were being fulfilled was met with such stern reproof from an omnipotent "House" that further experiments were postponed until they could be conducted under the mantle of authority. The method then developed from an application of mechanical principles to the recognized indications I have practised and taught to my private students for the past thirteen years.

However valuable or generally available in hospital service recent methods of skin-grafting may be, the chronic ulcer has not yet become a thing solely of historical interest. That it may be cured in most instances in a small fraction of the time required under the common methods of strapping or bandaging I know. I therefore take the liberty of recalling the indications for the use of adhesive straps and pointing out the necessary method of their application to most completely fulfil these indications.

Adhesive straps can fulfil these indications:

1. Approximation of ulcer margins: Thus diminishing the cavity to be filled by granulation, the surface to be covered by cicatrization and the subsequent injury from contraction. Such approximation implies the production of more or less cutaneous tension, and unless such tension is uniform circulation and local nutrition will be impeded. It is impossible to produce even moderately uniform cutaneous tension by the old method of strapping.

2. Compression: Either for absorption of inflammatory exudate and new tissue, or to restrain exuberant and prevent fungoid granulations. Such compression also must be uniform and elastic.

3. Support of tissues: Thus favoring circulation and nutrition.

4. Relief of tension and bending in cutaneous border of ulcer. The most important indication, as bearing on local nutrition and the one which common methods of strapping most completely fail to fulfil.

To attain in the most satisfactory manner and degree the foregoing indications the following method of strapping will be found competent:

1. Adhesive straps should not be over one inch in width, and usually a narrower strap is to be preferred.

2. Straps should be as short as is consistent with a firm hold on healthy skin, and should never fully encircle the limb.

3. All straps should be applied at *right angles* to the long axis of the ulcer, subject to slight modification by the direction of greatest cutaneous elasticity, and are to be adjusted in two sets.

First set.

4. These straps are applied in the usual manner by fixing one end on healthy skin and approximating the edges of the ulcer as the other end is applied and fixed.

5. The first strap of this set should *bisect the ulcerated surface.*

6. Each succeeding strap of this set should bisect uncovered ulcerated surfaces.

7. As any strap becomes loosened one end should be freed and reapplied under appropriate tension.

8. Straps should be applied in this manner until the uncovered strips of ulcerated surface are narrower than the straps in use. The second set is then applied.

Second set.

9. Each strap of this set is to be applied from its centre to both ends simultaneously under appropriate tension, so as to cover an exposed strip of ulcer, and overlap two adjacent straps of the first set. To accomplish this, the straps are held by both ends and adjusted while being firmly stretched.

The degree of tension under which these straps are applied will depend upon the tension under which the first set have been adjusted. If applied under too high tension they will cause puckering of the straps of the first set.

When it is desired to have the tissue compression especially even, it is well so to arrange the first set of straps that the strips of ulcer to be covered by the second set are reduced in width to a narrow line. Even when this is done it is quite as well to use at least a half-inch strap for the second set. When the strapping is completed openings for drainage may be made as necessary.

The essential factors in the foregoing method are:

1. The straps are all applied in the same direction, that of the desired traction, and therefore render their full adhesive value.

2. No two straps are allowed to come in contact until the second set is applied. As the major part of the effect depends upon the first set of straps this principle of noncontact is of the utmost value. As succeeding straps relieve the strain upon those already adjusted, any loosened strap can be detached and reapplied without disturbing others, and thus each strap made to exert its equable portion of tension and compression.

3. To gain the most even results, this condition of equal strain should be maintained from the outset of the strapping rather than attempted after all the straps of the first set are applied.

The results which can be obtained by careful and intelligent use of the above method are so far superior to those by any other measures as to leave little if anything to be desired.

Simultaneous Epithelioma of the Lip and of the Penis.—In *The Lancet* a case of this kind is recorded by Dr. Turner. A man, aged twenty-four, with no family history of malignant disease and a negative result from syphilitic treatment presented himself with a harelip and a warty mass of four months' growth on his lower lip. Both were operated upon, the latter being shown by microscopical examination to be distinctly epitheliomatous in character. He now confessed to a similar growth on the penis, dating back nearly a year, which had been treated ineffectually by caustics. The growth formed a sore, large and ragged, with hard and somewhat everted edges, chiefly on the dorsum and nearly surrounding the whole penis, extending from within half an inch of the root to the same distance from the tip. The growth was removed, involving a very considerable portion of the penile coverings, but neither the corpora cavernosa nor the corpus spongiosum was invaded. The patient made a good recovery. In concluding, the author adverts to the rarity of the development of epithelioma in two places so remote from one another as the lip and penis, particularly in so young a subject.

Progress of Medical Science.

Congenital Inguinal Hernia in Females.—Dr. Paul Berger alludes to the following points as symptomatic of the congenital origin of inguinal herniæ in females, consequent to the complete closure of Nuck's canal: 1. The existence of smooth fibres of muscles in the hernial sac, representing a continuous layer, corresponding to the tissue of dartos. 2. The great abundance of vessels in the sac, continuous with those passing out of the inguinal canal and following the round ligament. 3. The existence of incomplete septa that pass into the cavity of the hernial sac in the shape of diaphragms, semilunar folds, or valves. 4. The existence of a complete septum separating the peripheral portion as a closed cyst. 5. Finally, and especially, the very solid connection of the thin serous wall of the sac with the round ligament which the sac accompanies, as the vaginal process of peritoneum does the spermatic cord in the male.—*Brooklyn Medical Journal.*

The Radical Treatment of Congenital Inguinal Hernia in Females.—According to Dr. Lucas Championnière, the palliative treatment by means of trusses is becoming somewhat restricted. Increased frequency of operating has extended our knowledge of the pathological anatomy of the less frequent kinds of hernia, and our views concerning the stative frequency of the same are changed. Thus congenital inguinal hernia in females appears to be by far more frequent than was heretofore generally supposed. Among fourteen radically operated inguinal herniæ in women, he found in ten instances conditions pointing to a congenital origin of the disease. Among the symptoms to be so interpreted in this connection he mentions the existence of the round ligament in the wall of a hernial sac, which is hollowed out as by a furrow; the solid attachment of the serous covering with this ligament; the occurrence of small cysts on the base of the hernial sac. In the radical operation Dr. Championnière recommends that the incision be made as high as possible, in order to remove the latter as great a distance from the vulva as possible. The operator invades the inguinal canal, seeks the hernial sac from above downward, rather than *vice versa*. The serous cover of the round ligament is so intimately adherent to the sac that the removal of the sac without taking along the ligament is impossible. Therefore he separates, as a rule, the ligament together with the sac as high up as possible, and after ligating removes it. He found no disadvantages arising from this resection of round ligament, the stump of resection again attaching itself to the abdominal wall. The author recommends, after separating the hernial sac and before tying of the same, examination of the uterine annexa through the incision; if found to be diseased, these are to be extirpated at once. He believes this examination to be necessary, as these organs, in case of inguinal herniæ, are frequently dislocated to the affected side and are often diseased. The author provides against recurrences by splitting, in every instance, the inguinal canal in its whole length, separating and removing the peritoneum as high up as possible, and then uniting solidly and accurately the extensive denuded surfaces with each other by means of numerous deep sutures. A truss is but rarely prescribed. The author's results are very favorable, the operation in each instance was invariably followed by recovery. A number of patients examined afterward were found to be free from recurrence; in the majority of the cases operated upon the time which has elapsed since the operation is too short to base a conclusion upon.—*Annals of Surgery.*

The Use of Sulphur Baths.—Dr. Barthélemy points out the value of sulphur baths, if properly employed. But he admits that they have definite limitations, and should be closely watched. In general, they should never be used in acute inflammatory diseases, or the acute stage of chronic affections. The best results are obtained in the torpid or terminal periods of chronic disorders of the skin, and their tonic action in such diseases as rheumatism, tabes, neuralgias, etc., is also very useful. All details should be carefully attended to, as these baths are rarely used as they should be. Three a week is a sufficient number, and not more than twenty-five minutes at a *séance*, the temperature being from 34° to 36° C., and maintained there by additional warm solutions at proper intervals. After careful study, a water resembling that of Barège was chosen, made by the use of precipitated sulphur, alkaline carbonates, chlorides, and silicates. The quantity should vary with the age of the patient, the texture of the skin, and the condition of the lesion. Great care should be taken not to irritate the skin and increase the trouble by the use of too strong baths.—*Le Progrès Médical.*

Amœbic Dysentery.—The clinical term dysentery includes various forms of intestinal flux due to inflammation, and usually ulceration, of the large intestine. While the primary etiological agents in the acute catarrhal and the diphtheritic forms of dysentery are as yet but imperfently understood, the so-called tropical variety of dysentery has been made the subject of investigations that show it to be a distinct disease from an etiological, a clinical, as well as an anatomical standpoint. The investigations of Losch, in Russia, of Kartulis, in Egypt, of Councilman and Lafleur as well as others in this country and elsewhere, show the amœba coli (Losch) of dysentery (Councilman and Lafleur) to be constantly present in the evacuations and in the intestinal lesions of tropical dysentery, as well as in the quite frequent secondary liver abscesses, and in the sputum after the rupture of such purulent collections into the lung. Kartulis and Hlava have made successful injections into the large intestine of cats and dogs with pure amœbic cultures on straw infusion or with dysenteric stools. The amœba is a unicellular, nucleated, protoplasmic and vacuolated organism, capable of amœboid movements, showing usually a clear outer zone or ectosare, and a granular and vacuolated inner zone or endosare; it varies in diameter from 10 to 30 or more micro-millimetres, and is very easily demonstrated in the warm stools of tropical or amœbic dysentery, the diagnosis of which practically rests upon the detection of the amœba in the discharges. The excellent clinical and anatomical studies of Councilman and Lafleur, based upon a thorough review of the literature and the analysis of fifteen cases of the disease, occurring mostly in Osler's wards, showed that amœbic dysentery has a variable onset, course, and duration, with intermissions and exacerbations, tending always to chronicity and early anæmia; that abscess of the liver with or without lung involvement is a frequent complication; that anatomically the ulcers differ from those of other forms of dysentery, being produced by a primary submucous infiltration and subsequent necrosis of the mucous membrane, and consequently they present very distinctly undermined edges; in these ulcers as well as in the liver abscesses purulent inflammation is absent unless a secondary infection with bacteria should occur. As is well known, tropical dysentery is very common in tropical and subtropical countries, where it frequently occurs in epidemics; but it also appears throughout Europe and North America. Musser has demonstrated the disease in Philadelphia, and Hektoen not long ago exhibited before the Chicago Medical Society specimens of the intestine with microscopical preparations, from a typical case occurring in a young man who died in Chicago, after having contracted the disease in Galveston, Tex. Comparison of the specimens of dysenteric intestine in the Army Medical Museum at Washington, gathered during the War of the Rebellion by the industrious and able Woodward, with the intestine of the amœbic dysentery of to-day, shows the lesions to be in many instances exactly alike. The natural habitat of the amœba dysenteræ has not yet been found, but it is thought that drinking-water is one of the sources of infection.—*Journal of the American Medical Association.*

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IS ERGOT USELESS IN OBSTETRIC PRACTICE?

MOST of the standard works on obstetrics contain passages recommending the use of ergot in certain conditions of uterine atony or inertia. And the administration of a dose of ergot after the completion of normal labor is a matter of routine with a large majority of practitioners. Dr. J. F. Baldwin vigorously opposes the practice, and combats the idea of the utility of ergot. In a paper published in the *Columbus Medical Journal*, October, 1892, he tries to show that ergot may be entirely dispensed with in obstetric practice. He says that the use of ergot may be considered under two heads: First, as a means of increasing uterine contractions for expelling the child, and secondly as a means to prevent post-partum hemorrhage. He adduces the testimony of various authors in regard to its dangers in assisting delivery. In the Rotunda Hospital, in Dublin, the use of ergot as an oxytocic before delivery has been prohibited by the present master. Playfair would limit its use to cases in which the first stage is over, and the os fully dilated, and when the experience of former labors has proved the pelvis to be of ample size, and when the perineum is soft and dilatable.

So fatal is the effect of ergot on the child, that Dr. Hosack says that while in some of the books, from its effect in hastening labor, it has been called the *pulvis ad partum*, in regard to the child it should be denominated the *pulvis ad mortem*.

Lusk is quoted as follow: "We should abstain from the use of ergot during the second stage, unless it seem necessary as a prophylactic against post-partum hemorrhage, and even under these circumstances it should never be administered if there is the slightest mechanical obstacle to delivery."

Barnes says: "Before whipping up the uterus to increased exertion, we must be satisfied that there is no obstacle in front so great that reasonable increase of driving force will not overcome without injury. We must be sure that there is no marked rigidity along the parturient track, no distortion or contraction of the pelvis, no disproportion or malposition of the fœtus, or other obstructive complication. The postulate is not always easy to obtain; and error or miscalculation may entail serious, even fatal, consequences. This is one objection to ergot. There are many others. The case, once entrusted to ergot, is likely to be beyond our control. We have evoked a brutal power like that given to Frankenstein. Ergotism, like strychnism, will run its course. If it act too long or too violently, you cannot help it. You may try epichontocics, as chloral, nitrite of amyl, or physostigma, but these may fail. The ergotic contraction of the uterus, when characteristically developed, resembles tetanus. Then woe to the mother if any obstacle should delay the passage of the child. And woe to the child if it be not quickly born. The ergotic contraction does not observe the physiological character of alternating diastole, systole, and repose—conditions necessary to the orderly circulation of the blood through the uterus, placenta, and fœtus."

Other opinions are adduced in support of Dr. Baldwin's rejection of ergot. He is willing, however, to admit that, if a preparation of ergot could be secured that would be at all times thoroughly reliable, and if personal idiosyncrasies in regard to its use were not so common, it is probable that a dose could be found of the drug which would simply serve as an adjuvant to increase uterine contraction, which should not go beyond the danger line; but unfortunately the reverse of all this is true.

For the last ten years he has not given a single dose of the drug, and he no longer carries it with him. He concludes by saying that ergot should be banished utterly from the lying-in chamber.

There doubtless has been, and to some extent there still is, too much of mere routine in the employment of this potent remedy. But we are not prepared to go as far as Dr. Baldwin and entirely discard so valuable a drug. It is true that it should never be used in a hap-hazard way, and that the indications for its employment should be rigidly formulated. But the same might be said of almost every drug of decided power in the whole pharmacopœia.

NYSTAGMUS AMONG COLLIERS.

THE most important work upon the subject of nystagmus, so says the *Bulletin de l'Académie royale de Médecine de Belgique*, 1892, is Romiée's "Study of Nystagmus among Colliers." This book represents years of patient research among thousands of miners afflicted with nystagmus, visits to numerous mines, relations with physicians who treat miners exclusively, and studies undertaken in common with these medical men. While not exhausting the subject, the brochure is a most valuable contribution to medical literature.

According to Romiée, the nystagmus of colliers is due to the excessive fatigue of the muscle of accommodation, that is caused by working in a dim light and in cramped positions unfavorable to clear vision. This excessive fatigue of accommodation induces clonic contractions of the eyeball, and brings about an occupation nystagmus in from twenty to sixty-five per cent. of all miners in whom the symptom has been sought for. The condition is painless and gradually disappears with change of work. It is not influenced, nor is it produced, by anæmia. It occurs generally in persons who have more or less hypermetropia. In the morning, on Sundays and holidays, the nystagmus is lessened.

But how, physiologically, can nystagmus be related to

fatigue of accommodation? Artl thinks it is established in the interest of sight. Owing to defective lighting in a shaft where miners work, retinal images are feeble and confused, in spite of instinctive efforts toward better accommodation. Nystagmus comes in to render clearer the visual perception of objects. It is a well-known fact that when sight is blurred, objects become clearer if kept in motion before the eyes. The collier, unable to keep in motion the objects that the eye fixes, moves the eyeball instinctively with such rapidity that the point of retinal fixation is brought back many times in succession in front of the same luminous point before the preceding impression is effaced, and each time receives a new excitation. In this way is augmented the intensity of the visual impression. The movement of the eyeball is involuntary and instinctive, and is simply a compensation. To this view Barcella does not incline. The nystagmus of colliers he looks upon as a functional disorder of the equilibrium of the eye muscles, a chorea. Dransart considers colliers' nystagmus to be a myopathy of the muscles that raise the eye (internal and superior recti, and the inferior oblique), that is intimately connected with anæmia and paresis of accommodation. This view is based upon the study of twenty-eight cases. In colliers the line of vision is always above the plane of the horizon. Hence overwork, fatigue, and paresis of the levator muscles.

SHOULD DOCTORS MARRY?

North Carolina is being agitated over the question whether the doctor should marry. A misogynic gentleman, Dr. Oscar McMullen, seems to think he should not. This blow at the rights and opportunities of woman is tempered with the statement that the doctor does not wish to "take one gem from the jewelled crown of pure and beauteous womanhood." He belongs to "that majority who believe that, of all the beneficent gifts from the creative hand of God, a woman, pure and good, excels them all, and is more beautiful than 'any other form of matter ever seen on land or sea, in flower or gem or living thing.'"

> "'As flowers beneath May's footstep waken,
> As stars from night's loose hair are shaken,'

so the most vivid joys which perfect the life of man spring wherever her gentle step is heard, and from her presence there is distilled the rarest benedictions upon the responsive heart."

Yet despite this glowing tribute Dr. McMullen thinks that lovely woman is the cause of many professional failures, and that she should be taken very cautiously. A loving and angelic wife may, he thinks, be a trifle exacting; and the cherubic infant sometimes produces insomnia, mental unrest, and a condition generally not suited to serious study and work.

We fear that the doctor is to some extent right. The wife of a physician has always a good deal to disturb her ideals both of household economy, domestic comfort, and connubial companionship. It requires some patience and devotion to accept all the irregularities and preoccupation of her husband's life with equanimity. There has to be some compromise, or friction results, and then work is difficult. However, it does not do much good to philosophize, for young doctors fall in love like other mortals, and then reason and experience count for but little.

News of the Week.

Middleton Goldsmith Lecture.—Dr. William P. Northrup has been invited by the trustees to deliver the above lecture before the New York Pathological Society in April next; subject to be later announced.

A New Hospital in San Francisco.—The French Benevolent Society of San Francisco is about to erect a hospital at a cost of $200,000.

A New Substitute for Cocaine.—The acetamide of eugenol—which is contained in oil of cloves—has recently been prepared; it occurs in crystalline form, and appears to enjoy the property of producing local anæsthesia in a very high degree. It may be used similarly to cocaine for this purpose, and, as it has no caustic action and is an energetic antiseptic, it may be found to be even superior to cocaine for minor operations on the mucous membranes.

A Conference on Cholera was held at St. Petersburg, December 13th. The purpose of the conference was to decide on the measures to be adopted to meet the fresh outbreak of the disease that is fully expected to occur next year, more particular attention being paid to the special measures demanded by varying local conditions.

Enthusiasm over any Particular Form of Treatment for Cholera must be tempered by the fact that in no place visited epidemically by the disease was the mortality-rate much less than fifty per cent. In certain parts of Poland it rose as high as ninety per cent. When the rate gets above fifty, something is wrong with the treatment or the people. When the rate gets below forty, the therapeusis is worth looking into.

Death of Dr. B. A. Watson.—Dr. Bervah A. Watson, of Jersey City, died at his home on December 22d, aged fifty-six years. Dr. Watson was a surgeon of prominence in the army during the war. Since then he has attained distinction in the profession by his medical works. Dr. Watson had not long ago made a valuable series of observations on concussion of the spine. He also contributed to the subject of hydrophobia. Dr. Watson was one of the leading practitioners of Jersey City at the time of his death.

Death of Dr. Hunt, of Port Jervis.—Dr. J. Halsey Hunt, a prominent physician of Port Jervis and the founder of the Hunt Memorial Hospital, died in Salt Lake City, Utah, on December 21st, of apoplexy. Dr. Hunt was making an extended trip to the Pacific slope and Alaska. Dr. Hunt was a son of the late Dr. Isaac S. Hunt, and was born in Sussex County, N. J., in 1848. He erected a hospital in Port Jervis in 1889, and was Erie Railway surgeon until recently. He was also a director in the First National Bank of Port Jervis and the Electric Light Company.

The Typhoid Epidemic in St. Louis.—*The Weekly Medical Review* does not accept the view that the water-supply is the cause of the present epidemic of typhoid

fever in St. Louis. It says: "So far as its limitation to St. Louis is concerned, we have nothing to justify the assumption. In various localities it prevails to an alarming degree. In Massachusetts as well as in New Mexico there are numbers of marked cases; and the student of sanitary reports will find that in this country typhoid fever exists in a much more marked degree than it has for some years past. The prevalence is such that a common belief has sprung up that it is merely a forerunner of Asiatic cholera next year. Of course such is not the case, but the cause of the present prevalence is certainly mysterious. Thus, we do not seem to be able to find any adequate reason for the existence of typhoid fever in St. Louis. The water has been examined, premises inspected, and no particular condition discovered which would account for it."

Not Americans.—*The Medical Times and Register* says the effrontery with which the English journals foist their disreputable brothers upon America is quite amusing. Neill, or Cream, the "American" poisoner, happened to be born in Glasgow. Two Belfast rascals assumed the title of "The Faculty of American Physicians and Surgeons," and started to do up their countrymen. While they were speedily exposed, and every one is aware that they never saw America, the English journals still keep harping on them as "the American doctors."

The Academie de Médecine of Paris is to follow the example of other great metropolitan medical societies and have a new and finer building, formerly occupied by a pawnbroking establishment.

Remuneration of Medical Students who Served in the Hamburg Epidemic.—During the recent cholera epidemic in Hamburg a misunderstanding arose as to the remuneration of the medical students who volunteered their services. The dean of the medical faculty of Hamburg has now published the following: "The Cholera Commission of the Senate of Hamburg, in a letter addressed to the undersigned dean, expresses its thanks to all the students of medicine who assisted in combating the cholera epidemic, and at the same time intimates the wish to send the undermentioned fee to all those who worked in the Hamburg hospitals in the belief that their services were to be remunerated at the rate of twenty marks a day."

"The Telephone Ear."—We hardly needed Mr. Rudyard Kipling's vivid sketch of the life passed at the end of a telephone by the American millionaire in summer quarters to bring before us that latest outcome of a too keenly competitive civilization, the "telephone ear." That particular neurosis, which seems, in the New World at least, to be earning a place in classification with the "lawn tennis leg," had already been foreseen and described by Professor Lannois of the Lyons Medical School. For ears which are not especially sound he considers the telephone to be quite contra-indicated, as even in a comparatively robust organ its continuous use is followed by symptoms more or less grave—cephalalgia, vertigo, hyperæsthesia, insomnia, and sometimes psychical disturbances of a character which might become chronic. He counsels a sparing use of the instrument in the case of those whose ears are sound, and an absolute abstention from it in those whose organs are already impaired from causes hereditary or induced. His memoir, which was read and discussed in a confirmatory sense at the Congress of Aural Surgeons held in Paris in 1889, will be found in the "Comptes-Rendus et Mémoires," p. 265, for the same year.—*The Lancet.*

A Miracle Cure Exploded.—Archbishop Ireland recently dealt in a novel but most sensible way with a so-called miracle cure which was being exploited at Canton, Minn. The report was that a miraculous image of the Virgin and Child had appeared upon a pane of glass in the window of the church at Canton, and that infirm persons were making pilgrimages to the church. Thereupon the Archbishop gave orders that the matter should be investigated by a scientific expert whom he appointed. When the result of the investigation was made known to the Archbishop, a few days ago, he took the action in the case which is required by the laws of the Church, and the "miracle window" will not hereafter be seen. The expert found that a fraud had been perpetrated by a photographer of the place, who had subjected the pane of glass to a kind of treatment under which, by means of certain apparatus, the images were made to appear upon it. The expert also found that though many infirm pilgrims had been drawn to the place by reports that miraculous cures were performed there, not one of them had been relieved of his infirmity. He furthermore ascertained that a number of conscienceless men in Canton were allied with the photographer, and had mercenary reasons for trying to keep up the delusion.

Several Prominent Russian Physicians presented M. Pasteur with a costly gift on his seventieth birthday, which occurred on December 27th.

Kissing the Book in taking an oath is regarded by sanitarians as dangerous. In England one can be sworn with uplifted hand. Such is the practice here before a notary. It is also a fact that actual contact of lips with the book is not insisted upon in our courts.

France Has a New Medical Law.—It abolishes the grade of officier de santé, and makes it necessary for everyone who wishes to practise medicine in France to have a diploma obtained by examination before the Faculty of Medicine. Foreigners who possess a medical degree are exempted from certain parts of the examination. The notification of infectious diseases is made compulsory.

The Medical Students at Barcelona University have struck because of the scarcity of patients. The medical students of Athens have struck because the fees were too high.

The Fatality of Wet-nursing.—Mr. Tyndall has been giving some startling statistics concerning nursing as a livelihood. A healthy girl, seventeen years of age, he says, who becomes a nurse, dies twenty-one years sooner than a girl of the same age moving in the general population. That is to say, a hospital nurse, twenty-five years of age, has the same expectation of life as a person fifty-eight years of age has, who is a member of the community at large. Everyone is aware of the additional risks that inhere in the service of the trained nurse, but these facts are sufficiently startling. It is not probable, however, that they will deter many from the career, but they

will increase the appreciation of the public for the self-sacrifice, and often personal heroism, of the hospital nurse.

A Death Recently Occurred in England from Eating Canned Sardines.—The patient was a robust young man and he died with symptoms of acute alkaloidal poisoning. Chemical investigation showed that the poison was a ptomaïne or toxin due to decomposition. In the MEDICAL RECORD, some years ago, a note was published of a family seriously poisoned by eating sardines. No death occurred, however.

Lunatics and Epileptics abound in the Imperial family of Austria. It is stated that with the sole exception of the Emperor himself almost everyone of the archdukes and archduchesses belonging thereto is subject, in a greater or less degree, to fits of epilepsy.

"Roaring" in Horses is due to a paralysis of one of the dilators of the glottis, with a falling forward and downward of the arytenoid cartilage. French surgeons cure the trouble by extirpating the cartilage.

Music has a special effect on the vaso-motor functions and heart action. The violin, harp, and pianette, with a little vocal harmony, have the best effects. Music is indicated in the functional angiopathies.

Symphytrotomy has been done for the first time in the United Kingdom, by Dr. W. J. Smyly, of Dublin. The case was successful.

Italian Organ-grinders and their Children.—It is stated by Italian journals that there exists in Italy the practice of selling children to itinerant organ-grinders for service as performing children in the streets of New York, Paris, Berlin, and Vienna. In France, Belgium, and England, out of 1,000,000 children 280,000 die before their tenth year; in Italy the number is 480,000.

Death Through Laughter.—A curious case of accidental death formed the subject of investigation before a coroner's jury recently, the ostensible cause of the fatality being the act of laughing, in which the deceased, at the London County Lunatic Asylum, was indulging at the moment of death. In company with two other attendants she was engaged in conversation, in the course of which an amusing story was narrated, the effect of which was to create irresistible laughter on the part of the deceased nurse, who, in the effort to repress her excessive mirth, bent forward as though to stifle it, and forthwith died. The post-mortem examination subsequently made of the body showed that the cause of death was an accumulation of pericardial fluid, by which the free action of the heart was so much impeded that the extra strain produced by the attempt to stifle laughter resulted in its permanent cessation.

The Number of Doctors in Italy.—According to official statistics recently published in the *Bolletino della Direzione della Sanita Publica*, the number of medical practitioners in each of the principal cities of Italy is as follows: Turin with a population of 613,995 has 431 doctors, Genoa with 425,854 inhabitants has 240, Milan with 275,164 has 391, Venice with 149,686 has 124, Bologna with 354,584 has 215, Florence with 539,855 has 281 (?), Rome with 507,504 has 506, Palermo with 486,448 has 316, Messina with 238,294 has 117, while Naples with a population of 678,891 has 1,323. It will be seen, therefore, that Naples has the largest number of physicians, as well actually as in proportion to the population. But America still leads, and as long as two-year courses will secure a diploma, is likely to retain the lead.

Texas Medical College.—This institution does not seem to be the great success which it was anticipated to be by those who were most active in its establishment. At least we would judge so from what appears in Daniel's *Texas Medical Journal*, which says: A magnificent building was constructed, and every department thoroughly equipped for teaching modern medicine. An able faculty was secured, and a high and thorough curriculum was arranged, extending over three years' graded courses. No longer should it be a reproach to Texas that with her princely school fund and her university, where all else is taught, her sons were compelled to go abroad for medical education. After ever so many obstacles overcome, at last the doors of a magnificently prepared medical college were thrown open and students were invited to come in. They didn't come. The mistake was made by the Legislature. They—and not the Regents—as should have been the case, fixed the fees and fixed them too high. The fee is $140 per year. This is not high, but is higher than that of some other Southern colleges, hence Texas students get their diplomas elsewhere, and then come back to Texas to practise. The remedy proposed is to fix some restrictions upon the kind of medical diploma required to enable a man to practise in the Lone Star State.

The Treatment of Pneumonia.—Dr. Boardman Reed has expressed the following views: 1. Water locally applied, either by wet packs or in the form of baths, after the Brand method, is the most efficient single remedy or therapeutic measure for acute pneumonia. 2. Either veratrum viride or aconite can accomplish more than any other single drug in the first stage, and that the same is true of digitalis in the second stage. 3. A combination of one of these cardiac sedatives with opium and diaphoretics, affords not only a safe but an eminently successful internal treatment for the first stage of acute pneumonia, being capable of aborting the disease when its administration is begun near the onset, and is repeated at short intervals day and night. 4. Venesection, though a most efficient means of treating sthenic forms of pneumonia, and, judiciously employed, considerably more successful than any merely expectant method, is no longer an indispensable resource in managing the disease, since other remedies have been found to accomplish the same results more surely and pleasantly.—*Therapeutic Gazette.*

Doctors and Newspapers in San Francisco.—The San Francisco County Medical Society has adopted a resolution "that any member of this Society whose name shall appear in the daily press, describing his professional powers in an unprofessional manner, and who cannot give a satisfactory explanation of the same shall at the next meeting be expelled from the Society." The Society recently punished four members for permitting interviews of this kind.

The Palmist is the title of a new chirological review (not to be confounded with the "Psalmist") published in London in the interests of scientific palmistry.

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Adjourned Annual and Stated Meetings, November 28, 1892.

DR. G. H. FOX, AFTERWARD DR. C. C. LEE, IN THE CHAIR.

Report of the Censors.—This report was read by DR. VAN SANTVOORD, and included that of the counsel for the Society, Mr. Purrington. The amount of the fines imposed by the courts upon illegal practitioners had somewhat exceeded that of last year.

"The Medical Directory."—DR. DANIEL LEWIS, editor of the "Directory," read his report. The growth of the "Directory" was shown by the fact that the first issue, in 1885, contained 28 pages, while the issue for the present year contained 246 pages. In was, in fact, the standard "Medical Directory" for the city, containing the only complete and authentic list published. It had led to a large accession of membership and to prompt payment of back and current dues. The income from the advertisements somewhat exceeded the cost of publication. This report was accepted and a vote of thanks extended the editor.

Address of the Retiring President.—DR. FOX said he had had the honor to be the fiftieth President of the Society. During the year, owing to the efficient work of the comitia minora, the Society had prospered even more than during previous years; there had been a greater accession of members, and the number and value of the papers had given every reason for satisfaction. Limiting the length of papers to twenty minutes' reading, and individual discussions to five or ten minutes, had made it possible to present much valuable matter in a short space of time. Medicine was broad, and the science as it stood to-day had been built up from the facts acquired during the past ages, and especially during the present epoch-making generation. Still, there were those who wished to impose upon the people for gain, and practised without legal or scientific qualification. The Society had done much good for the public in ridding it of such impostors. Unfortunately there were also a number, legally qualified, who resorted to outrageous methods of advertising.

After expressing his faith in the future prosperity of the Society, he introduced the President-elect.

Address of Dr. Lee.—On calling the Stated Meeting to order the newly elected President, DR. CHARLES CARROLL LEE, expressed appreciation of the very great compliment paid him when he was elected to the highest office in the gift of the Society, especially as he had not been active in the councils of the Society and had done little to merit the suffrages of its many members. He could promise little, but would serve the Society to the extent of his ability.

Committees.—The following committees were appointed: *Ethics*, Drs. Everett Herrick, Laurence Johnson, W. H. Katzenbach, F. W. Jackson, J. West Roosevelt; *Hygiene*, Drs. W. A. Ewing, R. T. Morris, E. H. Grandin, J. T. Nagle; *Prize Essay*, Drs. E. B. Bronson, Beverley Robinson, Samuel Lloyd; *Auditing Committee*, Drs. G. T. Jackson, W. P. Northrup.

Modern Antiseptic Method of Removing Mammary Cancer.—DR. ROBERT F. WEIR read a paper with the above title (see p. 752).

A Limited Incision a Brutal Operation.—DR. A. G. GERSTER had found, when assisting beginners, that they made the incision for removal of the cancerous breast too small, and being hampered during the entire operation they bruised the tissues; this encouraged more rapid dissemination of any possible remaining cancerous material, and did the patient more harm than benefit. One bugbear in the operation had been fear of injuring the axillary vein, but with a free incision nothing was easier than to expose this vessel. For the last year and a half he had closed the wound entirely, using no drainage, and union had always taken place without fever or suppuration, which formerly had given more or less trouble.

DR. ROBERT ABBE said he now made his incision in the axilla somewhat lower, and thus avoided the necessity for a counter-opening for drainage, and sought primary union without employing the drainage-tube. A very large wound could be closed by Thiersch's dressing. He had wounded the axillary vein in one case because of its involvement in the cancerous growth, and his house-surgeon, in another, to a distance of an inch and a half, but sewed it up longitudinally with fine silk, and there had been no trouble afterward.

DR. BECK presented two women on whom he had operated for cancer of the breast. One was first operated upon in 1888, and illustrated the need of quick removal of recurring nodules, as she was still in comparatively good health although put under the knife four times.

DR. DANIEL LEWIS had observed that when the axillary vein was involved recurrence took place soon, and he therefore counselled against ligation and excision. He would rather abandon the operation. He fixed the arm only, leaving the forearm free, as it gave the patient greater comfort. Like Dr. Abbe, he made the axillary incision lower than Dr. Weir had represented, and thereby was able to dispense with drainage.

Resorcin in the Treatment of Chronic Gastritis.—DR. WILLIAM H. THOMSON gave his personal experience in private practice from 1886 to January, 1892, with resorcin in the treatment of chronic gastritis. Only such cases were included as had pronounced gastric disorder. They numbered 78, 41 of whom were females. The failures out of the 78 cases were 21; doubtful, 6; successes, 51. Where the gastric trouble was consecutive to nervous disorder the resorcin had no affect; not so when the nervousness was secondary to the gastric disturbance. Of the successful cases 17 presented symptoms of gastric ulceration. Four of the cases without evidence of ulceration belonged to what he called "railroad dyspepsia," meaning thereby dyspepsia arising from bolting food in order to make train time between city business and suburban home. The resorcin here was a success, of course with correction of the faulty habits. Four of the cases were in persons subject to migraine, and while the resorcin did not relieve the attacks of headache, it did act as a prophylactic. The benefit of an antiseptic like resorcin in these cases seemed to support the view that the element of intermittency which separated functional from organic nervous diseases pointed to a toxic origin for the former. Two of the patients benefited by resorcin had gastritis following grip. He rarely prescribed more than five grains, never in powder, but always in solution.

An Antiseptic, Anti-Fermentative, and Germicide.—DR. ANDREW H. SMITH thought resorcin possessed decided antiseptic, anti-fermentative, and germicidal powers, and at the same time it could be taken into the stomach in considerable amount without danger; one hundred and fifty grains had not caused death. The remedy was indicated in cases calling for these effects; besides, like carbolic acid, it possessed some anæsthetic effect on the terminal nerves in the stomach, and this might account for its power to arrest nausea. It would seem that a number of nervous troubles were the result of absorption of toxicants from the stomach and gastro-intestinal tract, and if this were true the field for resorcin would be a wide one.

DR. WILLIAM H. FLINT was convinced of the usefulness of resorcin in the class of cases related in the paper. In order to prolong the antiseptic effect beyond the stomach, he sometimes added salol, or creosote, protected so that it would reach the intestine. A drachm dose of a three per cent. solution of peroxide of hydrogen, fifteen minutes before meals, was useful in some cases.

INDEX.

A

Abdominal cavity, needle in the, 259.
Abdominal operations, purgatives after, 191.
Abdominal organs and tissues, abnormal conditions of, simulating disease of the uterus and its appendages, 601.
Abdominal section, for diagnostic purposes, 415; in pelvic peritonitis, 519.
Abdominal surgery, complications during and after operation in, 405; treatment of the peritoneum in, 605; what makes for success in, 661.
Abortion, criminal, among married ladies, 572; criminal, not murder in Germany, 737; habitual, assafœtida for, 494; in an hour, 339; treatment of, 172; tubal, 661.
Accouchement forcé in certain obstetrical complications, 407.
Accounts, physicians', 718.
Acne, treatment of, 36.
Actinomycosis, 78; treatment of, 352.
Actors, longevity of, 251.
Adenitis, a severe case of suppurative, 703.
Adenoids in the naso-pharynx in children, 183.
Adulteration of food, 341.
Advertiser, taking an, at his word, 384.
Advertising, medical, in England, 55.
Aëronautic casualties, 47.
Agathin, a new analgesic, 424, 514.
Aged, operations on the, 596; ovariotomy in the, 689; phthisis in the, 681.
Air in the veins, 25.
Air-passages, upper, use of sprays in the treatment of catarrhal affections of the, 107.
Aitken, Sir William, death of, 18.
Akinesia algera, 139.
Albertson, William C., the use of smoke as a curative agent in pulmonary phthisis, 444.
Albuminuria in epilepsy, 352.
Alcohol, vital statistics of total abstainers from, 84.
Aleuronat for diabetics, 311.
Allen, Charles W., impressions of some of the newer drugs in dermatological practice, 92.
Alopecia areata, treatment of, 280.
Aluminium, artificial limbs of, 551.
Alumni Association of Charity Hospital, officers of, 737.
Amblyopia, toxic central, terminating in progressive atrophy, 70, 104.
American Gynecological Society, 405.
American Health Resort Association, 131.
American Laryngological Association, 105.
American Medical Association, 21; union of, with the Canadian, 748.
American Neurological Association, 133.
American Ophthalmological Society, 197.
American Orthopedic Association, 436.
American Otological Society, 165.
Amœba coli, demonstration of, in the tissues, 461; dysentery due to, 756; importance of, in diagnosis and prognosis, 714.
Amputation, a modification of Teal's rectangular flap operation in, 248; a retractor for use in, 140, 261; and resection, primary consecutive, in traumatisms of the extremities, 67.
Anæmia, treatment of, 28.
Anæsthesia, hypodermic, 79; production of local, 493; the introduction of, 719.
Anæsthetic, a new local, 425.
Anæsthetics, collective investigation on, 79.
Anastomosis, intestinal, 257; intestinal, and approximation without sutures, 665; intestinal, by a new device, 687.
Anderson, R. Harcourt, graphospasmus, 361.
Andrews, Joseph A., an instrument for syringing out cortical matter in cataract extraction, 350.
Aneurism of the abdominal aorta, rupture of, into the psoas muscle, 430; of the aorta, treatment of, 458.
Angiokeratoma, 480.
Anglo-American Medical Association, 627.
Ankle-joint, complete erosion of the, 606.
Anorexia nervosa and hysterical trembling, 136.
Anthracosis, 289.
Anthropology, exhibit of, at the World's Fair, 391.
Anti-cancer League, 195, 626.
Antifebrine in scarlet fever, 481; toxic effects of, complicated with alcoholism, 511.
Antimony in skin-diseases, 478.
Antipyretics, an investigation of three, 421.
Antipyrine in epistaxis, 623; incompatibles of, 47, 443; smuggling, 220.
Antiseptic surgery, advances in, 23.
Antiseptics in abdominal surgery, 661.
Antitoxins, influence of, in the cure of disease, 170.
Anus, procto-plastic operation for the cure of cicatricial stenosis of the, 506.
Aorta, dilatation and atheroma of the, 378.
Apoplexy of the medulla oblongata, 547.
Apothecary's oath, 132.
Appendicitis, a plea for less surgical treatment of, 213; death from pulmonary embolism following operation for, 14; treatment of, 150.
Appendix vermiformis, lesions of, demanding surgical interference, 629.
Archivos de la Policlinica, a new journal, 711.
Aristol in dermatology, 93.
Armstrong, S. T., syphilitic hemiparaplegia, 31, 50.
Army, examination for the medical department of the, 599.
Arsenical wall-papers in England, 131.
Artists, psychology of, 480.
Ascites, 319; circumscribed, simulating ovarian tumor, 715.
Ashmead, Albert S., yellow fewer and the negro, 261.
Association of Medical Officers of the Militia of Canada, 27.
Asthma, nasal, alternating with circumscribed œdema of the skin, 539: neurotic, early symptoms of, 539; treatment of, 354.
Astigmatism, prevalence of corneal, in eyes with normal acuity of vision and without asthenopia, 615.
Asylum superintendent, insanity of an, 384.
Asylums, female physicians and the, 217.
Ataxia, hereditary, 593.
Athletic exercises as a cause of disease of the heart and arteries, 745.
Atropine, action of, upon the heart, 709.
Auscultation, in children, importance of attitude in, 679; intra-thoracic, 605, 625.
Australia, the medical profession in, 628.
Ayres, Edward A., a fecund family, 26.

B

Bacon, Leonard W., Jr., a common-sense bed-pan, 691.
Bacteria, and disease, 428; fighting mice with, 56; improved method of photomicrography of, 698; of phosphorescence, 565.
Baldness, treatment of, 421.
Balloch, Edward A., ectopia testis, with an illustrative case, 157.
Bandl, Dr. Ludwig, death of, 316.
Bangs, L. Bolton, blood in the urine, how to discover its source and what to do for it, 525.
Bank-notes, bacteria on, 253.
Bard, Cephas L., an improved iodoform box, 204.
Barham, Cuthbert R., a study of neurotic eczema in adults, 37.
Barnum, M. W., complete atresia of the cervical canal resulting from syphilitic ulcers, 190.
Barrett, W. C., the microbicidal action of tobacco smoke, 262.
Baths, cold, in tetanus, 680; permanent warm, employed in articular inflammation, 507; the "People's," in New York, 316; the use of sulphur, 756.
Baumster, H. M., the death-rate of Chicago, 718.
Becelaere, J. V., a retractor for amputations, 261.
Bed, how to go to, 660.
Bed-bugs as carriers of tubercle bacilli, 347.
Bed-pan, a common-sense, 691.
Bedford, Professor Peter W., death of, 131.
Beer-drinking and cholera, 440.
Belfield, William T., on the use of iodine trichloride in surgery, 66.
Bennett, O. Prescott, the falsetto voice, 536.
Bequests to physicians, legality of, 627.
Beri-beri in New York, 657.
Berlin, incomes of physicians in, 543; letters from, 225, 349, 439, 606, 746; medical work in, 355.
Bettman, Boerne, a new operation for the speedy ripening of immature cataracts, 122.
Bevan, D., a test reaction for the culture of the micrococcus pyogenes aureus, 70.
Billroth, Professor, jubilee of, 543, 607; memorial tablet in the birthplace of, 515.
Birdsall, Dr. W. R, resolutions on the death of, 48.
Bismuth, oxyiodide of, in dermatology, 92; salicylate of, in infantile diarrhœa, 192.
Bissell, Joseph B., daytime enuresis in children, 697.
Bladder, "caisson working" in the surgery of the, 690; diagnosis of tumors of the, by microscopical examination, 431; extraction of a bottle from the, 279; phenacetine for irritation of the, 593; pledget of cotton in the, for seven years, 690; rare malformation of the, 378; stone in the, formed around a piece of catheter, 517; tumors of, in children, 510; tubercular ulceration of the, 660.
Bleeding from the skin, 635.
Blindness, causes of, 484.
Blood, alkalimty of the, in disease, 480; in the urine—how to discover its source and what to do for it, 525; feigned

vomiting of, 744; new method of examining specimens of, 249; physiology and pathology of destruction of the, 716, 744; rotation of the, 218; white corpuscles as protectors of the, 678.
Blood-serum therapeutics, Behring on, 292.
Blood-serum treatment of pneumonia, 540.
Board of Health, Report of the Conference Committee of the New York Academy of Medicine, 516.
Bond, R. I., chewing-gum in fevers, 1575; digitalis in pneumonia, 704.
Book Notices:
Treatise on gynecology, medical and surgical, by S. Pozzi, M.D., translated from the French edition under the supervision of, and with additions by, Brooks H. Wells, M.D., 18.
A primer of materia medica for practitioners of homœopathy, by Dr. Timothy Field Allen, 19.
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Transactions of the Medical and Chirurgical Faculty of Maryland, 1891, 196.
Colorado State Medical Society, Transactions of the twenty-first annual convention, 196.
The human figure; its beauties and defects, by Ernest Brücke, 196.
The Mütter lectures on surgical pathology for 1890–91, by Roswell Park, M.D., 196.
System of practical therapeutics, edited by Hobart Amory Hare, M.D., assisted by Walter Chrystie, M.D., vol. ii., 196.
The Chinese: their present and future—medical, political, and social, by Robert Coltman, Jr., M.D., 196.
Braithwaite's Retrospect, vol. cv., January to June, 1892, 221.
Hydrotherapy at Saratoga, by J. A. Irwin, M.D., 221.
Diseases of women: a treatise for the use of students and practitioners, by Alexander J. C. Skene, M.D., 221.
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Homœopathic bibliography of the United States, from the year 1825 to the year 1891, inclusive, carefully compiled and arranged, by Thomas Lindsley Bradford, M.D., 221.
Proceedings of the Philadelphia County Medical Society, vol. xii., session of 1891, 221.
Transactions of the Southern Surgical and Gynecological Association, vol. iv., 221.
Les maladies des yeux dans leurs rapports avec la pathologie générale, par le Dr. Emile Berger, leçons recueillies par le Dr. R. de Saint-Cyr de Montlaur, 221.
Book Notices:
A new pronouncing dictionary of medicine, by John M. Keating, M.D., LL.D., and Henry Hamilton, 317.
Cure radicale des hernies, avec une étude statistique de 275 opérations et 50 figures intercalées dans le texte, par le Dr. Just Lucas-Championnière, 317.
Bacteriological diagnosis, by James Eisenburg, Ph.D., M.D. Vienna, translated, by Norval H. Pierce, M.D., 317.
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Du traitement par l'électrolyse des déviations et éperons de la cloison du nez, par J. Bergonié et E. J. Moure, 375.
Une mission en Espagne: l'hygiene et l'assistance publiques, by Dr. C. Delvaille, avec une préface de M. le Professeur Brouardel, 375.
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The extra pharmacopœia, by William Martindale, F.C.S.; medical references and a therapeutic index of diseases and symptoms, by W. Wynn Westcott, M.B. London, seventh edition, 375.
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Boro-borax, 584.
Bosley, Dr. George H., obituary of, 684.
Bottome, Frank A., a severe case of suppurative adenitis, 703.
Bowels, colorless motions from the, 755.
Bradbury, S., the power of sulphate of magnesium in curing catarrhal inflammation of the digestive track, 43.
Bradycardia and the action of atropine on the heart, 709.
Brain, a dog without a, 383; abscess of the, 78; atrophy of one hemisphere of the, 433; extensive pistol-shot injury of the, 341; gunshot wounds of the, 23, 378; localization of the action of remedies upon the, by intranasal medication and compression of the internal jugular veins, 749; localization of tumors of the, 716; minute hemorrhages of the, 433; of a Chinese, 136; operative procedures at the base of the, 23; otic disease of the, 489; perimeter measurements in the diagnosis of local disease of the, 321; sensory-motor functions of the, 238; sexual differences in the, 132; sexual differences in the, and high-school education, 45; the criminal, 136.
Brandegee, William P., a combined post-nasal spray and palate retractor, 579.
Breast, carcinoma of the, following traumatism, 461; excision of the, 428; how amputation for carcinoma of the, should be performed, 752, 761; inflammation of the, compression corset for, 171; some observations on cancer of the, 573.
Bright's disease, dyspnœa of advanced, 192, 652; chronic, treatment of, 385; lesions of, 52; regimen in, 484.
British Medical Association, 229; admission of women to the, 290, 312; annual addresses before the, 168; section on medicine, 318; section on obstetric medicine, 285; section on public health, 322; section on surgery, 254.
Bronchial casts in fibrinous bronchitis, 289.
Bronchitis, tuberculous, treatment of, 353.
Broncho-pneumonia, tuberculous, 320.
Bronson, Edward Bennet, origin of type in disease, 441.
Brothers, A., notes on two cases of spontaneous intermittent hemorrhage, 362.
Broun, LeRoy, fifty selected cases from the practice of Dr. Clement Cleveland, at the Woman's Hospital of the State of New York, 499.
Bryant, Joseph D., fourth laparotomy on an hysterical patient, 726, 745.
Buchanan, Sir George, a testimonial to, 219.
Buck, Albert H., a contribution to the technique of mastoid operations, 96.
Bull, Charles Stedman, traumatic irido-choroiditis, ending in intra-ocular glioma, 189.
Burns, europhen in, 353; in children, treatment of, 680; treatment of, 419.

C

Caddy, Arnold, excision of the inner two-thirds of the right clavicle for sarcoma, 586.
Cæsarean section, elective, 459; most favorable time for, 405; prevention of hemorrhage in, 285.
"Caisson working" in bladder surgery, 690.
Calcium salts, therapeutic value of, 493.
Camphoid, 190.
Canada, letter from, 747; quarantine in, 460; the military surgeons of, 104.
Cancer, a new parasite in, 182; and erysipelas, possible antagonism of, 403; autoinfection of, 351; chimney-sweeps', alleged decline of, 173; collapse of the Mattei treatment of, 290, 307, 404; league against, 195, 626; micro-organisms of, 47; of the breast following traumatism, 461; of the breast, how amputation for, should be performed, 752, 761; of the breast, some observations on, 573; of the femur in a boy thirteen years old, 44; of the ileum, excision of, 745; of the larynx, partial laryngectomy for, 631; of the liver, 223; of the rectum, 256; of the rectum, medical treatment of, 595; of the stomach, operations for, 15; of the uterus, operations for, 408; of the uterus, vaginal hysterectomy for, 29, 30, 49; parasitic origin of, 571; pastes for, 423.
Cannabis indica in the painful diseases of women, 155.
Capparelli, Dr. Leonzio, a medical novelist, 355.
Capsicum in hiccough, 348.
Carbolic acid, antidote for, 493.
Carbuncle, treatment of, by injection of carbolic acid, 455.
Carotid, common, ligature of the, 256.
Carr, Walter Lester, a case of scorbutus in an infant, 419.
Cartilage, inflammation of, 436.
Castle, F. A., physicians' accounts, 718.
Castor-oil, palatable, 383.
Castration for melancholia, 736.
Cataract, instrument for syringing out cortical matter in extraction of, 350; new shield for the protection of the eyes after operation, 664; operation for the speedy ripening of immature, 122; statistics of some operations for, 172.
Catarrh, intestinal, sulphate of magnesium in, 43; nasal, snuffs for, 494.
Catgut, an apparatus for the sterilization of, 648, 748.
Catheter, an improved, 175.
Cellulitis, malignant, 537.
Cemeteries, sanitation of, 157.
Cerebral artery, middle, thrombosis of the, 288.
Cerebral development, pathology of arrested, 135.
Cerebro-spinal disturbances in women, relation of the organs of reproduction to, 715.
Cervicitis, various forms of, 689.
Chancre of the eyelid, 535; of the mouth, 393.
Chancroid, microbe of, 281.
Chapped hands, application for, 354.
Charaka Samhita, 458, 485.
Chase, Dr. Enoch, death of, 316.
Cheesman, William S., ovariotomy in the presence of peritonitis, 308.
Chemistry, bearing of, on medicine, 491.
Chest, prognosis of gunshot wounds of the, 455.
Chicago, the sanitary condition of, 46, 217, 633, 718.
Child, a matured, 72.
Child-bearing, asthenia from, 292; factory operatives and, 322.
Child-birth, facilitation of, in the Kirghiz, 328.
Children, adenoids in the naso-pharynx in, 183; daytime enuresis in, 697; exhibit of appliances for, at the World's Fair, 738; hygiene of, 510; importance of attitude in the auscultation of, 679; methylene blue in three cases of malaria in, 191; new born, stomatitis due to irritation of epithelial pearls in the mouth of, 411; treatment of burns in, 680; vesical tumors in, 510; vulvo-vaginitis in, 707.
Chili, medical journalism in, 140.
Chimney-sweeps' cancer, alleged decline of, 173.
Chinese, brain of a, 136; medical ideas of the, 477.
Chloroform and ether question, a contribution to the, 74; treatment of heart-failure from, 344, 368; inhalers, a new feature of, 608; narcosis, induction of, during sleep, 603; narcosis, treatment of suspended animation in, by insufflation in the inverted position, 340.
Chlorosis, sulphur in, 264.
Cholagogues, action of, 745.
Cholecystitis, suppurative, 248.
Cholecystotomy, 690.
Cholera, a post-mortem phenomenon in, 383; and Cuban quarantine, 619; and fright, 459; antiseptics in, 402; bacillus of, see *Comma bacillus;* Cantani method of treating, 403, 439; clinical history of the first case of, in New York, 420; clinical observations on two cases of, 531; cremation of those dead from, 384; criminal treatment of, 736; disinfection in, 389, 741; evacuant treatment of, 368; explanation of the epidemic of, at Hamburg, 371; in England, 463; in Hamburg, 430, 654; in London, 379; in New York in 1832, 492; in Paris in 1892, 720; in Srinagar, 321; local measures of prevention of, in New York City, 376; lysol in, 367; mercury in, 633; mortality from, 371; onions in, 684; quinine in, 399, 676; practical experiments in the treatment of, in St. Petersburg and Hamburg in the epidemic of 1892, 693; precautions for nurses and physicians, 372; prophylaxis and treatment of, 434; preventive measures against, 349, 747; preventive inoculations against, 219, 370, 401, 711; previous epidemics of, in the United States, 369; progress of the epidemic of 1892, 48, 103, 129, 161, 193, 220, 250, 280, 312, 314, 344, 373, 737; regulations concerning, 282, 284; strychnine in, 284; the latest story anent, 720; the practitioner and, 376; the section in public health of the New York Academy of Medicine on, 370, 375; tobacco as a preventive of, 711; treatment of, 284, 337, 365, 367, 371, 380, 399, 403, 434, 439, 440, 548, 633, 676, 692; treatment of, at Havre, 513; treatment of, on Swinburne Island, 741; treatment of, based on the experience gained in the Hamburg epidemic, 606; treatment of the algid stage of, 494; vaccination against, 219, 370, 401, 711.
Cholera morbus, treatment of, 435.
Chorea, Huntington's, 222; Huntington's, congenital, 137; in a negro, 215; post-influenzal, 495; treatment of, 400, 493.
Choroiditis, metastatic, 245.
Christian science and divorce, 598.
Chronic diseases, precision in the treatment of, 721.
Cigarette epidemic, 328.
Cimicifuga in uterine disorders, 291; indications for the use of, 680.
Circle of Willis, a social organization, 459.
Circumcision for papillomatous growths on the prepuce, 25.
Cirrhosis, hæmatemesis in, 435.
Clark, Dr. Henry Grafton, death of, 402.
Clark, S. S. P., the lost art of venesection, 33, 162.
Clark, Sir Andrew, and doctors in politics, 655.
Clavicle, excision of the inner two-thirds of the, for sarcoma, 586; treatment of fracture of the, 214.
Club-foot, etiology and treatment of, 437; modern treatment of, 714; treatment of, 528. See also *Talipes.*
Cocaine, anaphrodisiac effect of, 354; cantharidinate of, 515; in tinnitus aurium due to middle-ear disease, 479; sub-conjunctival application of, 200.
Cocainism, 474.
Cock, Mr. Edward, death of, 463.
Cocks, G. H., traumatic injuries to the eye, 555.
Cœliotomy after labor, 406.
Cohn, I. E., the Chinese and their peculiar medical ideas, 477.
Colectomy for closure of an artificial anus, 429.

Colic, hepatic, glycerine in, 435, 652; renal, exploration of the kidney for, 222.
College of Pharmacy, new building for the New York, 739.
Colon, irrigation of the, 427.
Columbus, medical history of, 482.
Colvis, Dr. Joseph, death of, 253.
Coma, treatment of diabetic, 159.
Comma bacillus, a test for the, 327; biological character of the, 387; destruction of the, in caviare and tobacco, 738; experiments in swallowing, 738, 746; observations on the viability of the, 413; quick method of distinguishing, 594.
Congo, doctors on the, 596.
Conjunctivitis, gonorrhœal, 565.
Connell, M. E., an experimental contribution looking to an improved technique in enterorrhaphy, 335.
Constipation, abdominal pressure for, 592; habitual, 128.
Consultant, a frank, 264.
Consumptives, sanitaria for the care of, 367.
Contagious diseases, weekly statement, 27, 83, 112, 140, 176, 204, 232, 264, 291, 328, 354, 383, 411, 440, 468, 495, 523, 551, 580, 608, 634, 692, 748.
Contract medical services, 521.
Contract surgeons, 76.
Cooper, O. O., report of a case of extensive pistol-shot injury of the brain—recovery, 341.
Coplin, W. M. L., a test-reaction for the culture of the micrococcus pyogenes aureus, 70.
Cork, George A., horse-shoe kidney, 589.
Cornea, general form of the human, 198; staining the nerves of the, 200.
Corning, J. Leonard, the localization of the action of remedies upon the brain by intranasal medication and compression of the internal jugular veins, 749.
Coronary artery, abnormal origin of the, 51.
Cough, some of the causes and the treatment of, 11.
Cowper's gland, cyst of, 605.
Cow, the, as an enemy of mankind, 490.
Cows, 355.
Craig, Thomas C., a small allowance of water per diem, 574.
Craniometric studies in relation to aural anatomy, 166.
Craniotomy, discussion of the justifiability of, 685.
Cream, Thomas Neill, the strychnine fiend, 597.
Creasote in soda water, 354; use of, in tracheotomy, 351.
Cremation at Glasgow, 636; in England, 348, 356, 552; in time of war, 341; of cholera victims, 384.
Creoline in dermatology, 94.
Criminals, reformatory treatment of, 101; the product of hereditary degeneracy, 96.
Croton water, 313.
Crowds, diseases and accidents of, 482.
Cuban medical congress, 283.
Culture and professional success, 544.
Curette, a modified Gottstein's, 291.
Cushing, Clinton, abdominal section for diagnostic purposes, 415.
Cystitis, ammonium benzoate in, 47; salol in, 353; treatment of, 520.
Cystocele, Stoltz's operation for, 286.

D

Dana, Charles L., a neurological outlook, 126.
Darwinism and disease, 21.
Davis, A. E., a study of 131 consecutive cases of enucleation, 445.
Dawbarn, Robert H. M., a new method of checking bleeding after tonsillotomy, 690; arterial saline infusion, 559.
Deaf children, teaching, to hear, 473.
Deafness, catarrhal, operation for, 167; labyrinthine, treated by pilocarpine, 191.
Death from a trivial accident, 140; movement to abolish the penalty of, 738; organic and somatic, 422; painlessness of, 552; sudden, due to fatty degeneration and dilatation of the heart, 261; the pain of, 457.
Deaver, Dr. J. M., death of, 252.
Debauch, tonic after a, 354.
Debtor, the doctor as a, 204.
Deformity, trade in, 26.
Delirium tremens, cause of, 55.
Delivery, post-mortem, 251; the sitting posture during, 652.
Denison, Charles, essentials of a good stethoscope, 494.
Dennis, Frederic S., the achievements of American surgery, 637.
Dentition, troubles of, 479.
Depilatory, formula for a, 353.
Dermatitis exfoliativa, case of, 591.
Dermatol in dermatology, 94; in diarrhœa, 565.
Dermatological practice, impressions of some of the newer drugs in, 92.
Deshon, Robert, clinical history of the first case of cholera in New York, 420.
Dessau, S. Henry, how sball we treat cholera? 380.
Diabetes mellitus, a new remedy in, 76; aleuronat in, 311; peculiar condition of the blood in, 259.
Diabetic coma, treatment of, 159.
Diagnosis, a case difficult of, 658; physical, a new departure in, 605, 625.
Diaphtherin, a new bactericide, 440.
Diarrhœa, choleriform, of young children, 548; dermatol in, 565; disinfection of the discharges in, 373; from retroflexion of the uterus, 735; infantile, salol in, 494; summer, salt for, 104; summer, treatment of, 353, 354.
Diet and digestion, influence of, on the voice, 713.
Digestion, influence of, on the voice, 713.
Digitalis and the digitalins, 570; in kidney disease, 539, 633; in pneumonia, 704; long-continued administration of, 430.
Dilator, cervical, of Champetier de Ribes, 286.
Diller, Theodore, two cases of neuritis, 534.
Diphtheria, 216; and allied pseudo-membranous inflammations, 113, 141; and its relationship, 585; etiology and treatment of, 611; from rags after nine years, 440; hydrogen peroxide in, 425; infectious, erythema in, 480; modern treatment of, 566; prevention of the spread of, 28; pyoktanin in, 706.
Disease, chronic, precision in the treatment of, 721; names, definitions, and classifications in, 549; origin of type in, 441.
Disinfectant, sulphur dioxide as a, 376.
Disinfectants, 493.
Disinfection, criticism of methods of, 369; directions for, 315.
Dislocations, diagnosis of, by sight, 662.
Dispensary abuse, a plan for the suppression of the, 230; in Germany, 225.
Docking horses, a veterinary surgeon fined for, 571; law against, 495.
Doctors, as popular leaders, 459; in politics, 655; number of, in the United States, 292; the emancipation of, 343; should they marry? 758.
Dog clinic in Philadelphia, 164.
Dog-meat, 496.
Doggerel, medical, 422.
Douche, nasal, substitute for the, 365.
Douglas, Dr. J. H., obituary of, 425.
Dowd, Charles N., an apparatus for the sterilization of catgut, 648.
Doyle, Dr. Conan, 220.
Drainage in surgery, the present status of, 689.
Dreifus, E., dysentery and ptyalism, 538.
Drowning, aural vertigo as an occasion of, 710; resuscitation in cases of, 328.
Drug stores in the United States, number of, 738.
Drugs, specific action of, 155.
Drysdale, Dr. John, death of, 252.
Dunham, Edward K., some observations on the viability of the cholera bacillus, 413.
Dunn, John, a modified Hartmann snare, 382.
Dwelling-house sanitation, 463.
Dysentery, amœbic, 756; and ptyalism, 538; repeated attacks of, associated with hepatic abscess, 377; treatment of, 128.
Dyspepsia, stray thoughts about, 472.
Dyspnœa of advanced Bright's disease, 192, 652.

E

Ear, disorders of the, in typhoid fever, 273; extension of disease of the, to the brain, 489; operations on the middle, 167; relation of aural and nasal affections, 148; removal of a bony growth from the external auditory canal by means of drills, 311; some new instruments for the, 262; treatment of discharges from the, 427.
Earache, acute inflammatory, 429; repeated attacks of, importance of determining the cause of, 715.
Earthworms and tuberculosis, 279.
Eaton, F. B., some practical uses of the ophthalmometer of Javal-Schiotz, 577.
Echinococcus cysts, iodoform emulsion in, 494.
Eclampsia, bacillus of, 226, 249; toxicity of the serum in cases of, 680.
Eczema, infantile, 27; neurotic, in adults, 37; solar, 480; treatment of, 35, 568.
Edgar, J. Clifton, intra-uterine injections of glycerine for the induction of labor and stimulating of uterine contractions, 620.
Edson, Cyrus, the propagation and preservation of vaccine virus, 391.
Education, as a therapeutic measure, 523, 580; southern medical, 292, 492.
Eggs by enema, 399.
Egotism, insanity of, 592.
Egypt, phthisis in, 320; wintering in, 205.
Elbow-splint, a fixation, 438.
Electrical methods as a substitute for surgery in certain pelvic affections, 428.
Electricity, a machine for the production of all kinds of, from a single storage battery, 262; use of, in midwifery, 729.
Electrode, a new flexible, 26.
Electro-therapeutics in Paris, 561; relations of a possible electric polarity of metabolism to, 265.
Ellis, R., the nervous sequelæ of typhoid fever, 398.
Elsner, S. L., treatment of chronic endometritis, 417.
Endocarditis, malignant ulcerative, 658; ulcerative, 519.
Endometritis, treatment of chronic, 417.
Enema, eggs by, 399; nutrient, 737.
England, conditions under which foreigners may practise medicine in, 323.
"English disease," the, 328.
Enterorrhaphy, an improved technique in, 335.
Enuresis, daytime, in children, 697; rhus radicans in, 707; treatment of nocturnal, in children, 570.
Epidermin, 132, 192.
Epilepsy, albuminuria in, 352; antirabic inoculation for, 125; caloric, 128; etiology of idiopathic, 133; hydrastinin in, 310; pilocarpine for, 47; sleep movements of, 133; surgical treatment of, 135.
Epileptic status, treatment of, 171.
Epileptics, separate provision for, 134.
Epistaxis, antipyrine in, 623.
Ergot, is it useless in obstetric practice? 757.
Erysipelas, phlegmonous, 537.
Erythromelalgia, 746.
"Escuela de Medicina," a new medical journal, 600.
Ether, an appliance for the administration of, 381; and chloroform question, a contribution to the, 74.
Ethmoiditis, suppurating, 107.
Eucalyptus honey, 28.
Eugenol-acetamide, a new local anæsthetic, 628.
Europhen, clinical observations on, 700; in burns, 353; in dermatology, 94.
Evans, Thomas R., dislocations at sight, 662; southern medical education, 492.
Evolution in disease, 21.
Exophthalmic goitre, 250.
Exophthalmos, pulsating, 200; treatment of, 354.

Expectoration, repression of, in public places, 130, 140.
Expert testimony, medical, proposed law concerning, 283.
Extension in the treatment of posterior spinal sclerosis, 192.
Eyelid, chancre of the, 535.
Eyes, appearance of the, in disease, 679; artificial, 455; gunpowder injury to the, 197; law of symmetry of the, 198; of California students, 540; of different colors, 279, 399; one hundred and thirty-one consecutive cases of enucleation of the, 445; traumatic injuries to the, 555; tuberculosis of the, 539; with normal acuity of vision, corneal astigmatism in, 615.

F

Factories, employment of married women in, 679.
Factory operatives and child-bearing, 322.
Faith-cures, the old time, 15.
Falsetto voice, 536.
Family physician, the ideal, 194.
Faster, insanity of a professional, 112.
Fasting for a medical college, 599.
Fecundity, remarkable, 26, 82.
Fee, cutting down a, by the court, 540.
Fees, large, 194; lawyers' and physicians', 710.
Femur, adduction following fracture of the, 436; fracture of the neck of, treated by the Thomas hip-splint, 565; malignant tumor of the, in a boy aged thirteen, 44
Ferguson, John, the diagnostic and prognostic value of tendon reflexes, 1.
Fevers, chewing-gum in, 575; feeding in, 620, 631; infectious, some complications and sequelæ of, 321.
Fibroids, uterine, and syphilis, 542; uterine, hysterectomy for, 409.
Filaria sanguinis hominis, photographs of, 51.
Fire-arms, surgical meaning of the new, 77, 83.
Fischer, Louis, a test for the comma bacillus, 327; treatment of diphtheria by pyoktanin, 706.
Fistula in ano, 622.
Fitch, George L., the etiology of leprosy, 293.
Fithian, Dr. Enoch, death of, 712.
Flatulence in stomach disorders, 249.
Flies, a death sentence on, 412.
Folie à deux and similar types of insanity, 137.
Foot, anomaly of the, 547.
Foot-ball mania, 567.
Forceps, value of, in complicated high arrest of the breech, 410.
Forrester, Joseph, eyes of different color, 399.
Fractures, intra-uterine, etiology of, 623; symptoms of, 687; treatment of compound, 26; treatment of ununited, by resection, 687.
France, higher medical degree in, 515; requirements for medical practice in, 231.
Freaks, the manufacture of, 215.
Freeman, Rowland Godfrey, the sterilization of milk at low temperature, with description of a new apparatus, 8.
Fruitnight, J. Henry, clinical observations on two recent cases of cholera asiatica, 531.
Fuchsine in dermatology, 94; in Paget's disease, 164.
Fuller, Dr. Fraser C., death of, 103; resolutions on the death of, 570.
Fuller, Robert M., an improved method of photo-micrography of hacteria and other micro-organisms, 698.
Fullerton, Erskine B., quinine in cholera, 399, 676.

G

Gallacetophenone in psoriasis, 353.
Gall-bladder, surgery of the, 254, 256, 497, 593; thickened, resembling cancer of the liver, 224.
Gall stones, 223.
Galvanic current, some minor therapeutic uses of the, 716.
Gambling for the benefit of hospitals, 74.
Gangrene, diabetic, question of amputating for, 604; of the lower limbs following intestinal obstruction, 550.
Garrison, Harriet E., scarlet fever treated with antifebrine, 481.
Gas, illuminating, nitroglycerine in poisoning by, 159.
Gastritis, chronic, resorcin in, 761.
Genital tuberculosis in women, 715.
Genito-urinary tract, tuberculosis of the, 432.
Genius and insanity, 597.
Georgia, medical legislation in, 655.
Georgia State Medical Association, forty-third annual meeting of the, 172.
German Physicians' Meeting, 225.
German Surgical Society, 77.
German universities, medical students in, 608.
Germany, the medical profession in, 102.
Getz, Charles, a new vaginal irrigator, 578.
Gibbons, John T., a neurosis? 589.
Gibney, Virgil P., the surgical treatment of acute arthritis of the hip in infants, 505, 517.
Gladstone and mastication, 47.
Glanders, new test for, 457.
Glaucoma, etiology of, 197.
Glioma, intra-ocular, following traumatic irido-choroiditis, 189; of the cord, 631.
Glycerine in hepatic colic, 435; intra-uterine injection of, 570, 576, 620.
Goitre, exophthalmic, 250; exophthalmic, treatment of, 354; surgical treatment of, 257; treatment of, 483.
Gonorrhœa in women, 429; in women, general aspects of, 407; in women, results of, 480; permanganate of potassium in, 352; peroxide of hydrogen in, 702.
Gonorrhœal conjunctivitis, 565.
Gonorrhœal joint affections, pathogenesis of, 208.
Gottheil, William S., clinical observations on europhen, 700.
Gout, chemistry and therapeutics of 174; in a child, 635; pathology and treatment of, 342.
Graphospasmus, 361.
Gravel and the uric acid diathesis, cause and treatment of, 129.
Gray, Henry V., a study of the relationship between the sphincter of O'Beirne and the valve of Bauhin in the functioning of the large intestine, 705; interrupted and conversion method of treating malaria, 531.
Green, Dr. James S., death of, 48.
Green, John Traill, absolute rest of the parts the best treatment for lesions of the vocal cords, 44.
Greene, Dr. Robert Warren, death of, 544; resolutions on the death of, 712.
Green, Dr. W. B., death of, 48.
Grier, W. F., toxic effects of antifebrin complicated with alcoholism, 511.
Griffin, E. Harrison, chancre of the mouth, 393.
Grocers' Company of London and scientific research, 717.
Groner, F. J., spina bifida, excision, recovery, 214.
Gross professorship of pathological anatomy, 683.
Guanajuato, insalubrity of, 355.
Guatemala, pharmaceutical law in, 600.
Guillotin, erection of a bust of, 634.
Gum-lancing, 351.
Gunshot wounds of the chest, prognosis of, 455.
Gynecologist, the general practitioner as a, 688.
Gynecology, fifty selected cases at the Woman's Hospital of New York, 499.

H

Hæmatemesis in cirrhosis, 435.
Hæmatocele resulting from tubal pregnancy rupturing into the broad ligament, 686.
Hæmoglobinuria, so-called malarial, 26.
Hæmolysis, 716, 744.
Hæmorrhoids, calomel for, 420, 565; ointment for, 493.
Hair, the, and surgical operations, 512.
Hall, A. L., creasote in the treatment of pulmonary tuberculosis, 151.
Hall, Rufus B., clinical report of gall-bladder operations, 497.
Halsted, T. H., adenoids in the naso-pharynx in children, 183.
Hamburg, cholera in, 439, 654.
Harelip operation, 690.
Harris, Charles H., abortion in an hour, 339.
Hartmann snare, a modified, 382.
Harvey, Thomas W., tubal pregnancy, 420.
Hats, the philosophy of, 513.
Haviland, Frank W., a needle in the ovary, 398.
Healey, Dr. Thomas M., death of, 220.
Healey, Joseph S., value of thorough vaginal tamponing in placenta prævia, 704.
Health, a national bureau of, 683.
Heart, a piece of steel in the, 348; action of atropine upon the, 709; chronic disease of the, 367; diffuse infiltrating sarcoma of the, 461; disease of the, from athletics, 745; eccentric hypertrophy of, 289; etiology of chronic disease of the, 541; extensive valvular disease of the, 378; heat to the epigastrium in failure of the, 412; increasing the intensity of the sounds of the, 75; musical murmurs of the, 288; new contributions to the physiology of the, 73; of a suicide, 713; thrombosis of the, 518; treatment of disease of the, 320; use of stimulants to the, in acute lobar pneumonia, 728, 743.
Height and health, 510.
Hemialbuminuria, 158.
Hemianæsthesia in father and daughter, 734.
Hemiparaplegia, syphilitic, 31, 50.
Hemorrhage by suggestion, 351; control of, after supra pubic prostatectomy, 331; post-partum, 285; post-partum, subcutaneous injections of a saline solution for the acute anæmia following, 395; post-partum, treatment of, 407; two cases of spontaneous intermittent, 362.
Hernia, congenital inguinal, in women, 755, 756; in infancy, 73; incomplete operation for, 713; inguinal, new instrument for treating, 629; radical treatment of, 686, 716; radical treatment of inguinal, 6, 756; retro-peritoneal tuberculosis simulating, 407; strangulated, 427; treatment of umbilical and ventral, 686; umbilical, in women, 410.
Hewlett, W. W., thrombosis of the pulmonary artery in the puerperal state, 591.
Hiccough, pilocarpine for, 635; red-pepper tea for, 348.
Hinde, Alfred, a case of toxic central amblyopia terminating in progressive atrophy, 70, 104.
Hindus, some advice from the ancient, 485.
Hip, double congenital dislocation of the, 629; old gunshot wound of the, 259.
Hip-disease, amputation in, 22; amputation through the thigh in, 662; case of cured, 79; classification of, 436; etiology of the various deformities of, 437; reflexes in, 510; surgical treatment of acute, in infants, 505, 517.
Hog-cholera, vaccination for, 478.
Holder, A. B., papers on diseases among Indians, 177, 329, 357.
Hooper, Dr. Franklin H., death of, 654.
Hospitals, field, location of, 77; in London, 91.
Hubbell, M. D., eyes of different colors, 279.
Huddleston, John H., three cases of malaria in children treated successfully by methylene blue, 191.
Hunter, D. W., a combination test-cord, 579.
Huntington's chorea, a case of, 222; congenital, 137.
Husband, Mr. William Dalla, death of, 252.
Huxley on the title of "doctor," 328.
Hyaloid artery, posterior capsular opacities at the place of attachment of the, 199.

Hydatid cyst of the liver, 603.
Hydræmia, septic, following miscarriage, 286.
Hydrastinin in epilepsy, 310.
Hydrastis canadensis in obstetrics, 192.
Hydrogen peroxide in dermatology, 93; in diphtheria, 425; in gonorrhœa, 702.
Hydrocephalus, chronic, paroxysmal tetanic spasm in, 249.
Hygiene, bureau of, at the World's Fair, 745.
Hymen, anatomy of the, 288.
Hyperidrosis of the hands and feet, 411.
Hyperphoria, prominent symptoms of, 199.
Hypnotism as a moral force, 356.
Hypodermoklysis, 567.
Hypogastric artery, ligature of the, 23.
Hysterectomy for carcinoma, 408; for carcinoma complicated with myomata, double hydrosalpinx, and cystic ovaries, 603; suprapubic, 583; vaginal, in malignant diseases of the uterus, 29, 30, 49.
Hysteria, Hippocrates on, 75; treatment of, 16.
Hysterical patient, fourth laparotomy on an, 726, 743.

I

Ice, in Paris, purifying the source of, 496; in relation to cholera, 313; value of application of, over the spine, 127.
Ice-water, a plea for, 488.
Ichthyol in dermatology, 93.
Ileum, excision of a cancerous growth of the, 745.
Ilium, sciatic neuralgia due to osteo-sarcoma of the, 80.
Incomes of medical men, 28; in Berlin, 543.
Incoördination, combined cerebellar and spinal, 134.
Indians, diseases among, 177, 329, 357.
Inebriates, female, and special legislation, 422.
Inebriety, alleged gold-cure of, in London, 102, 218, 316; among women, 544; strychnine in, 636.
Infancy, hernia in, 73.
Infant, an, born with teeth, 589; scorbutus in an, 419, 575; spontaneous reduction of intussusception in an, 678.
Infants, rules for the care of, 83; surgical treatment of acute hip-disease in, 505, 517.
Infection, to prevent the spread of, in Detroit, 634.
Influenza, myelitis following, 418; some pathological conditions of the upper air-passages coincident with attacks of, 105.
Infusion, arterial saline, 559.
Ingals, Ephraim, the sanitary condition of Chicago, 719.
Inhalers, anæsthetic, a new feature of, 608.
Insane, a modern asylum superintendent's view of the care of the, 736; colony system for the, in France, 345; woman physicians in asylums for the, 350.
Insanity and genius, 597; and sun-spots, 281; in the United States, decrease of, 628; increase of, 542; nature of, 491; of egotism, 592; phthisis in its relation to, 139; sensory and sensory-motor disturbances associated with, 139; toxic origin of, 138; types of, similar to folie à deux, 137.
Insomnia and mental depression, 597; treatment of, 595.
Insufficiencies, ocular, tenotomy of the recti muscles for, 199.
Intestinal anastomosis, 257; by a new device, 687; without sutures, 665.
Intestinal invagination, dangers of, subsequent to operation, 188.
Intestinal obstructions, diagnosis and treatment of, 85; gangrene of the lower limbs following, 550.
Intestinal surgery, experimental contribution to, 335.
Intestinal sutures, 550.
Intestine, large, relationship between the sphincter of O'Beirne and the valve of Baubin in the functioning of the, 705; perforation of, by a spoon, 471; small, resection of the, 746.
Intubation of the larynx, for chronic stenosis, 106; versus tracheotomy, 545.
Intussusception in an infant, spontaneous reduction of, 678.
Iodine trichloride in surgery, 66.
Iodoform, an improved box for, 204; deodorized, 95.
Irido-choroiditis, traumatic, ending in intraocular glioma, 189.
Iris, tuberculosis of the, 539.
Iritis, etiology of, 512; plastic, correction of manifest refractive error in, 198.
Iron, therapeutic uses of, 264.
Irrigation-tubes, accessory sinus, 607.

J

Jackson, Dr. A. Reeves, death of, 628.
Jackson, Chevalier, a practical transilluminator, 521.
Jamaica, the healing waters of, 626.
Janvrin, J. E., the limitations for vaginal hysterectomy in malignant diseases of the uterus, 29, 49.
Japan, rheumatism in, 355.
Jaw, dislocation of the, 579.
Jejunostomy, a new method of, 351.
Johnson, Charles C., death of, 103.
Johnson, Ira T., transposition of the viscera, 397.
Johnston, Dr. Francis Upton, death of, 737.
Joint amputations, 24.
Joint-lesions, three cases of unusual, 436.
Joints, pathogenesis of gonorrhœal affections of, 208; permanent warm bath in inflammation of, 507.
Jones, Dr. Montgomery, death of, 738.
Jones, E. L., two cases of hemialbuminuria, 158.
Jones, Isaac J., so-called malarial hæmoglobinuria, 26.
Jones, Jonas, obituary of, 684.
Journalism, honest, the dangers of, 655.
Jugular veins, compression of the internal, with intranasal medication in the localization of the action of remedies on the brain, 749.

K

Kaufman, J., an infant born with teeth, 589.
"Keeley cure" in London, 102, 218, 316.
Kelly, Howard A., confinement on the obstetric pad, 663.
Kennedy, James, amputation of the thigh for tuberculosis of the tibia, 214.
Keratitis, treatment of vesicular, 159.
Keratosis, original, 383.
Keyes, E. L., an efficient method of controlling hemorrhage after supra-pubic prostatectomy, 331.
Kidney, a large hydronephrotic, 430; absence of one, 518; digitalis in disease of the, 539, 633; exploration of, for renal colic, 222; extirpation of the, for tumor, 746; horseshoe, 518, 589; movable, 576; movable, and diseases of the generative organs in the female, 469; movable, seldom found at autopsy, 602; movable, vomiting in, 624; removal of a tumor of, from a child two years old, 431; rupture of the, during parturition, 378; sarcoma of the, 430; syphilis of the, surgically considered, 159
Kimball, Dr. J. Albert, death of, 219.
Kime, Sara A., female physicians in insane asylums, 350.
Kinnaman, A. S., treatment of fracture of the clavicle, 214.
Kinnear, B. O., ice scientifically applied over the spine is agreeable as well as beneficial to the patient, 127.
Knee joint, an unique derangement of the, 57, 80; injuries of the, 429; lateral dislocation of the, due to tubercular disease or paralysis, 436; six cases of excision of the, 438.
Koehler, F. W., an improved stethoscope for use in auscultatory percussion, 576.
Krog, Albert, a case of vaginismus, 42; fracture of the penis, 397.
Krouse, L. J., procto-plastic operation for the cure of cicatricial stenosis of the anus, 506.

L

Labium majus, epithelioma of the right, 289.
Labor, adhesion of the nymphæ after, 576; cœliotomy after, 406; induction of, by intra-uterine injections of glycerine, 570, 576, 620; value of the forceps in complicated high arrest of the breech, 410.
Lactation and menstruation, 632.
Lamblin abdominal needle, 263.
Laminectomy, 258; for Pott's paraplegia, 593.
Lane, Mr. Samuel Armstrong, death of, 252, 291.
Langenbeck House in Berlin, 48.
Laparotomy after labor, 406; fourth, on an hysterical patient, 726, 743.
Laryngectomy, partial, for extensive carcinoma, 631
Laryngoscopy, Frau Gelby of Vienna as a living model for the practice of, 571.
Larynx, death from impaction of meat in the, 602; epithelioma of the, 289; extirpation of the, 79, 157; extraction of a safety pin from the, 214; rare forms of growth in the, 106.
Lateral curvature of the spine, 437.
Lautenbach, Louis J., the ancient history of a new ear instrument, 262.
Lead-poisoning from a bullet, 636.
Leaming, Dr. James R., obituary of, 684; resolutions on the death of, 712.
Lee, Elmer, practical experiments in the treatment of cholera in St. Petersburg and Hamburg in 1892, 693.
Legislation, need of national, for the protection of human life, 27.
Leprosy, etiology of, 293, 632; in the Caucasus, 112; operation for, 78; pure cultures of the bacillus of, 53.
Lesbian love and murder, 104.
Letters from Berlin, 225, 349, 439, 606, 746; from Canada, 747; from London, 54, 81, 173, 290, 379, 462, 491, 519, 549, 604, 661, 690, 716, 744; from the Riviera, 108, 200, 226, 323, 463.
Leukæmia, rapidly fatal, after traumatism, 595.
Levy, Sigfred, contribution to the treatment of club-foot, 528.
Lewinthal, David C., a dilating trocar, 522.
Lichen planus treated by hydrotherapy, 311.
Licorish, R. F., delirium tremens, has it a dual origin? No! 55.
Liebig, A., diphtheria and its relationship, 585.
Ligaments, round, shortening the, 588.
Linsley, Joseph H., micro organisms of the mouth, 59.
Literature, the physician and, 176.
Lithopedion, a, 53, 405.
Littlejohn, Eugene M., San Antonio and Southwest Texas as a winter resort, 588; the Rocky Mountain region for consumptives, 152.
Liver abscess of the, 353, 433; acute yellow atrophy of the, 430; acute yellow atrophy of, and syphilis, 506; difficulties of diagnosis in lesions of the, 222; hydatid cyst of the, 603; phlebotomy of the, 163; resection of, for hepatic tumors, 679; rupture of an abscess of the, 717; sclerosis of, and the hepatic cell, 539; surgery of the, 254, 256.
Livingston, Dr. Watts C., obituary of, 739.
Locomotor ataxia, 631; Bonuzzi's treatment of, 368.
Locum tenens, the, 290.
Lodging-houses, wire mattresses and provision for isolation in, 738.
London, hospitals in, 91; letters from, 54, 81, 173, 290, 379, 462, 491, 519, 549, 604, 661, 690, 716, 744.
Longenecker, C. B., the essentials of a good stethoscope, 575.
Louise Lateau, a modern, 746.

Ludlow, Ogden C., use of electricity in midwifery, 729.
Lumbrici, unusual number of, 562.
Lunatics, changes in the State care of, 570.
Lung, abscess of the, 254, 433; gangrene of the, complicating pneumonia, 53; rupture of the, following pleurisy with effusion, 53; suture of the, 417, 495.
Lupus, curetting in, 311; diagnosis and treatment of, 24; dietary treatment of, 628; thiosinamine in, 744.
Lymphadenitis, tubercular, operative treatment of, 434.
Lyon, Dr. D. S., death of, 316.
Lysol, internal use and dosage of, 367.

M

McClelland, Sophia, criminals the product of hereditary degeneracy, 96.
McCoy, Thomas J., a new shield for the protection of the eyes after cataract operations, 664.
McCready, Dr. Benjamin, death of, 195.
McGillicuddy, T. J., notes on conservative obstetrics, 212.
McManus, James, scorbutus in infancy, 575.
Macleod, Sir George, death of, 379.
Magill, William S., requirements for medical practice in France, 231.
Magnesium sulphate in the treatment of catarrhal inflammation of the digestive tract, 43.
Malaria, etiology of, 594; in children, treated by methylene blue, 191; interrupted and conversion method of treating, 533; resorcin in, 494.
Malarial fever in Tampico, 412
Malformations, various congenital, 51.
Malpractice suit, end of a, 16.
Manley, Thomas H., primary consecutive amputation and resection in traumatisms of the extremities, 67.
Mannermann hammer and chisel, 79.
Marion, T. D., Dudley's operation on the cervix, with a report of five cases, 589.
Marmonier, monument to, 599.
Massage, physiological action of, upon human muscle, 479.
Massey, G. Betton, concerning a new flexible electrode, 26.
Mastoid disease, 165, 166.
Mastoid operations, contribution to the technique of, 96.
Matheny, R. C., the treatment of certain familiar diseases of the skin, 35.
Mather, E. E., urine of high specific gravity, 538.
Mattei exposure, 290, 307, 404.
Mattison, J. B., cocainism, 474.
Mattresses, wire, in lodging-houses, 738.
Meacher, William, dislocations of the shoulder, 563.
Measles, and religion, 28; bacillus of, 440.
Meatus, exostosis of the external auditory, 168.
Medical and Chirurgical State Faculty of Maryland, 714.
Medical centres, 737.
Medical college, a corpse in a, 371.
Medical instruction, in England, 379; postgraduate, 682.
Medical parliaments, efficacy of, 291.
Medical registration, reciprocity in, 747.
Medical science, slow progress of, 543.
Medical services, contract, 521.
Medical Society of New Jersey, one hundred and twenty-sixth annual meeting of the, 170.
Medical Society of the County of New York, 434, 761; officers of the, 542.
Medical Society of Virginia, 426.
Medicine and morals, 355.
Meding, C. B, physician heal thyself, 210.
Medulla oblongata, apoplexy of the, 547.
Melancholia, castration for, 736.
Melano-sarcoma with melanuria, 659.
Meningeal artery, middle, rupture of the, 260.
Meningitis, basilar, occurring in a case of chronic purulent otitis media, 166; cerebro-spinal, 322; cerebro-spinal, the pneumococcus in, 128.
Meningocele, lumbar, successful removal of a, from an adult, 64, 80.
Menopause, first sign of the, 191.
Menstrual periods, periodical pain between the, 405.
Menstruation and lactation, 652.
Mentone, 463.
Mercurial tremor, question of the existence of, 483.
Mercury, in cholera, 633; presence and localization of, in the system, 623.
Metabolism, possible electric polarity of, 265.
Mettler, L. Harrison, the sensory-motor functions of the brain, 238.
Mexican Medical Congress, the first annual, 711.
Mexico, medical practice in, 543.
Meyer, E. J., a retractor for amputations, 140.
v. Meyer, Dr. Georg Hermann, death of, 316, 350.
Micrococcus pyogenes aureus, test reaction for the culture of, 70.
Microbe of soft chancre, 281.
Microbes, as chemists, 412; improved method of photo-micrography of, 698.
Micturition, frequent, phenacetin for, 420; restoration of the lost function of, 258.
Midwifery, reprehensible, unnecessary, and necessary antiseptic, 576; use of electricity in, 729.
Milk, sterilization of, at a low temperature, 8.
Millard, Henry B., a summary of what can be accomplished in the treatment of chronic Bright's disease, 385.
Millennium, is it at hand? 423.
Miller, John S., an improved shot compressor, 692.
Milliken, Samuel E., the radical cure of inguinal hernia—Bassini's method illustrated, with remarks on recurreat and ventral hernia, 6.
Mineral springs of Jamaica, 626.
Miscarriage, septic hydræmia following, 286.
Misericordia, the, of Florence, 356.
Missionary, the medical, 263.
Missionaries, superiority of medical over clerical, 112.
Mitchell, S. Weir, precision in the treatment of chronic diseases, 721.
Mittendorf, W. F., two cases of metastatic choroiditis, 245.
Models, anatomical and pathological, a new material for, 50.
Moles, tubal, 661.
Mollinger, Father, the remedies of, 347.
Money, paper, bacteria on, 253.
Moral side of medical practice, 652.
Morton, William James, a possible electric polarity of metabolism, and its relations to electro-therapeutics and electro physiology, 265; the introduction of anæsthesia, 719.
Morvan's disease, a form of leprosy, 496.
Mosquitoes in London, 355.
Mountain climbers, fatal accidents to, 662.
Mouse typhus, extermination of field-mice by, 349.
Mouth, chancre of the, 393; micro-organisms of the, 59.
Mulattoes, offspring of, 551.
Mumps, Hippocrates on the, 75; troubles of salivary secretion in, 479.
Munger, Carl E., a modified Gottstein's curette, 291.
Murdoch, Frank H., an unusual case of pneumothorax, 43.
Murphy, J. B, intestinal anastomosis and approximation without sutures, 665.
Murray, Alan B., treatment of carbuncle by injection of carbolic acid, 455.
Muscular sense, the, 135.
Mutilations, hereditary transmission of, 103.
Myelitis, acute, of the dorsal cord, with rapidly fatal motor and sensory paralysis, 137; compression, a case of, 52; following catarrhus epidemicus, 418.
Myles, Robert C., accessory sinus irrigation tubes, 607.
Myocarditis, interstitial, 432.
Myopia, full correction of, 197.
Myxœdema, fresh thyroid gland as a food in, 571; subcutaneous injections of thyroid extract for, 580.

N

Nævus of the peritoneum, 550.
Nagle, John T., some thoughts on contract medical services, 521.
Naphthol in dermatology, 92.
Napoleon, the pulse of, 328.
Nasal asthma alternating with circumscribed œdema of the skin, 539.
Nasal douche, substitute for the, 565.
Nasal spray and palate retractor, a combined, 579.
Navy, work in Venezuela by medical officers of the, 653, 711.
Negro, chorea in a, 215; the eye of the, 199; vitiligo in a, 575; yellow fever and the, 261.
Nelson, J. O., the sterilization of catgut, 748.
Nerve currents, hearing the, 514.
Nervous disease during Græco-Roman antiquity, 510; traumatic, 138; treatment of chronic, in patients of the rheumatic diathesis, 309; treatment of syphilitic, 138.
Nervous women, types and treatment of, 523.
Neuralgia, facial, formula for, 440.
Neurasthenia, new cure for, 343; objective signs of, 479.
Neurectomy of the sciatic for neuroma, 25; of the trigeminal at the foramen ovale by Sulzer's method, 742.
Neuritis, peripheral, 318; two cases of, 534.
Neurology, outlook of, 126.
Neuroma, ganglionic, of the supra-renal capsules, 51.
Neuropathies, toxic, 541.
Neuroses in chronic rheumatoid arthritis, 322; treatment of, with microbic ferments, 627.
Neurosis, a, 589.
Neurotic asthma, early symptoms of, 539.
New Jersey, medical history of, for 1891, 170.
New Mexico Medical Society, 402.
New York Academy of Medicine, 489, 545, 601, 741; anniversary meeting, 627; report of the conference committee of the, 516. Section on Public Health, 370, 375; Section on Obstetrics and Gynecology, 576; Section on Surgery, 79, 629.
New York City, number of physicians in, 48.
New York County Medical Association, 548, 713.
New York Hospital Alumni Association, 711.
New York Pathological Society, 50, 259, 288, 377, 430, 461, 518, 547, 602, 658.
New York Post-Graduate School and Hospital, laying the corner-stone of the, 656.
New York State Medical Association, Fifth District Branch, 49.
Newton, Richard Cole, successful extraction of a bottle from the bladder, 259.
Nice, typhoid fever at, 636.
Night-sweats of phthisis, picrotoxine in, 735.
Nipples, sore, ichthyol for, 623.
Nitroglycerine, dose of, 224; in poisoning by illuminating gas, 159.
Nomenclature of disease, 549.
Nose, after-results of cauterization of, 107; correction of deformity arising from abscess of the septum, 107; cosmetic surgery of the, 24; medication of the mucous membrane of the, combined with compression of the internal jugular veins, as a means of localizing the action of remedies upon the brain, 749; more common forms of stenosis of the, 715; red, application for a, 354; relation of aural and nasal affections, 148; removal of a shoe-button from the, 603.
Nurses and religion, 28; association of visiting, in Chicago, 75; post-graduate course for, 316.
Nursing knows no creeds, 355.
Nymphæ, adhesion of the, after labor, 576.
Nystagmus among colliers, 757.

O

Oakley, Mrs. John M., to repress expectoration in public places, 140.
Oatmeal pyrosis, 264.
Obermueller, Dr , death of, 284.
Obstetric pad, confinement on the, 663.
Obstetrics, notes on conservative, 212; scientific, at Winkel's clinic in Munich, 655.
Œdema of the skin, circumscribed, alternating with nasal asthma, 539.
Œsophagus, removal of a peach-stone from the, 716; safety-pin impacted in the, 431.
Oklahoma, medical practice in, 493.
Old age, operations in, 539; ovariotomy in, 689; phthisis in, 681.
Omentum, tumors of, mistaken for pelvic tumors, 601.
Onions in cholera, 684.
Ontario, medical council of, 747.
Onuf-Onufrowicz, B., post partum hemorrhage followed by sepsis—treatment of the acute anæmia by subcutaneous injections of a saline solution—recovery, 395.
Oöphoro-salpingitis, new treatment of, 460.
Opacities, posterior capsular, at the place of attachment of the hyaloid artery, 199.
Ophthalmia, treatment of granular, by pyoktanin, 480.
Ophthalmometer of Javal-Schiotz, some practical uses of the, 577.
Opium, a moderate use of, opinion of the life insurance companies upon, 572; a struggle with, 634; defence of the use of, by the women in India, 496.
Opium-habit, medical defence of the, 251.
Opportunities, Sir John Lubbock on the use of, 491.
Orbit, cellulitis of the, 200.
Orchid tea, 347.
Orificial surgery, 104, 355.
Orme, H. S., leprosy and syphilis, 632.
Osteitis deformans, 436.
Osteoclasia for knock-knee and bow-legs, 438; specimen showing the result of, 547.
Otitis media, and optic neuritis, 166; antiseptic solutions in purulent, 167.
Ovarian tumor, pregnancy with, 216.
Ovariotomy in cases of general neurosis, 440; in old women, 689; in the presence of peritonitis, 308; prevention of secondary hemorrhage after, 409.
Ovary, a needle in the, 398; and tube, cystic lesions of the, 377; circumscribed ascites simulating tumor of the, 715; cyst of the, and fimbriæ of the tube, 288; morphology of tumors of the, 688.
Overholt, S., a case of malignant tumor of the femur in a boy aged thirteen, occurring in the practice of E. J. Smith, M.D., 44.
Owen, Sir Richard, obituary of, 739.
Oxychinaseptol, 132.
Ozæna, treatment of 419.

P

Paget's disease, fuchsin in, 164.
Pain, periodical inter-menstrual, 405.
Palate retractor and post-nasal spray, a combined, 579.
Panama, the health of, 348.
Pan-American Medical Congress, 403; influence of, on sanitation and quarantine, 548; prospects of the, 624; State aid for the, 654.
Pancreas, injury of the, 255.
Paris doctorate, questions at the examination for, 164.
Paris, water-supply of the suburbs of, 384.
Paralysis, pneumonic, 542; pressure, operation for, 79; rapidly fatal motor and sensory, with acute myelitis of the dorsal cord, 137.
Paraplegia of Pott's disease, laminectomy for, 593.
Park, William Hallock, diphtheria and allied pseudo-membranous inflammations, 113, 141.
Parker, Francis L., extraction of a safety-pin from the larynx with Mackenzie's forceps, 214.
Parker, William Thornton, does she do it? 633.
Parturition, rupture of the kidney during, 378.
Pasteur Institute in New York, 552.
Peabody, George L., feeding in fevers, 620, 631.
Pelvic affections, electrical methods as a substitute for surgery in certain, 428.
Pelvic cellular tissue in woman, 601.
Pelvic operations, drainage after, as influenced by preliminary curettage of the uterus and Trendelenburg's position, 529.
Pelvic peritonitis, abdominal section in, 519, 691.
Pelvic surgery, advances in, 685; complications during and after operations in, 405.
Pelvis, treatment of hard tumors of the, 430.
Pemphigus neuroticus, 176.
Penis, fracture of the, 397.
Pental, death under, 351; narcosis by, 79.
Pericarditis, ice in, 320.
Perineum, laceration of the, 186.
Peritoneum, nævus of the, 550.
Peritonitis, ovariotomy in the presence of, 308; pelvic, abdominal section in, 519, 691; surgical treatment of puerperal, 172; traumatic, 661; tubercular, spontaneous cure of, 690; tubercular, treatment of, 689.
Perraza, Dr. José Miguel, death of, 402.
Pertussis, etiology of, 746.
Peterson, Frederick, some practical points in the diagnosis of spinal cord lesions, 553; wintering in Egypt, 205.
Pharyngo mycosis, 105.
Phenacetin in vesical irritation, 593; peculiar vaso-motor disturbance after the administration of, 341.
Phlebotomy, visceral, 23, 163.
Phosphorescence, bacteria of, 565.
Phthisis, cold-air treatment of, in the case of a Russian Grand Duke, 17; eucalyptus honey for, 28; importance of symptom-treating in, 715; in its relation to insanity, 139; in later adult life, 681; influence of diathesis upon the progress of, 651; non bacillary, 351; picrotoxine in the night-sweats of, 735; the urine in, 679; Tyndall on, 411. See also *Tuberculosis.*
Physical education, a congress of, 28; compulsory, 424.
Physician, a faithful district, 738; heal thyself, 210.
Physicians, family, a syndicate of, 738; and the right of way, 572; number of, in Ontario, 748; the comfort of, 737.
Physicians' accounts, 718.
Physics and physic, 491.
Physiologists, Second International Congress of, 372.
Picrotoxine in the night-sweats of phthisis, 735.
Pierson, William, tubal pregnancy, 420.
Pilocarpine for hiccough, 635; in labyrinthine deafness, 191.
Pityriasis versicolor, 539; internal treatment of, 569.
Placenta prævia, thorough vaginal tamponing in, 704.
Placzek, S., hemianæsthesia in father and daughter, 734.
Plants, diseases of, 318.
Plaster-of-Paris in orthopedics, 430.
Pleural effusions, surgical treatment of, 254.
Pleurisy and rheumatism, analogy between, 22.
Pleuro-pneumonia, and empyema, 52; removal of quarantine against, 402.
Pneumathæmia, 707.
Pneumococcus in cerebro-spinal meningitis, 128.
Pneumonia, digitalis in, 704; genesis of, 21; lobar, possibly of microbic origin, 462; paralysis following, 542; pathology of sudden death in, 171; rational treatment of, 147; serum treatment of, 540; treatment of, 172; treatment of, by the artificial production of abscesses, 368; use of heart-stimulants in acute lobar, 728, 743.
Pneumothorax, unusual case of, 43.
Podrowsotski, Dr. Valerian, death of, 252.
Poisoning by sulphonal, 523
Post-Graduate Hospital of New York, laying of the corner-stone of the, 656.
Post graduate instruction, for nurses, 316; the success of, 682.
Post-mortem examinations of animals and birds, 368.
Post-partum hemorrhage, subcutaneous injections of a saline solution for the acute anæmia following, 395; treatment of, 407.
Pott's disease associated with fibrinous, peritoneal, and pleuritic adhesions, 602; rotary lateral deformity of the spine in, 333; surgery of, 192; ultimate deformities of, 437.
Pott's paraplegia, laminectomy for, 593.
Powers, Charles A., the treatment of spina bifida by excision, with report of the successful removal of a lumbar meningocele from an adult, 64, 80.
Practical side of medical practice, 653, 717.
Practitioners' Society of New York, 222, 517, 631, 742.
Pravaz, Dr., death of, 194.
Pregnancy, extirpation of a cancerous uterus in the sixth month of, 680; extra-uterine, 523; tubal, 420; tubal, ruptured, 433; twin tubal, 286; vomiting of, cocaine for, 496; vomiting of, menthol for, 494; with ovarian tumor, 216.
Prescriptions, ownership of, 424.
Prince, A. E., an extreme case of suspended animation from chloroform resuscitated by direct insufflation in the inverted position, 340.
Prince, a medical, 424.
Prize, for an essay on tuberculosis, 152; for the invention of a microphonic audiphone, 514, 636; offered by the Medical Temperance Association, 485; the Alvarenga for 1893, 598; the Riberi, 373; the Warren triennial, 515.
Probes and probing, 630.
Proprietary medicines, enforcing the fulfilment of promises made by advertisers of, 384; resolutions against, 75.
Prostate gland, new method of removing the, 147; operation for enlarged, 258.
Prostatectomy, control of hemorrhage after, 331.
Prostitution, regulation of, 253, 283, 567, 708.
Pruritus vulvæ, cured by the constant current, 311; wash for, 579.
Pryor, William R., drainage after pelvic operations as influenced by preliminary curettage of the uterus and Trendelenburg's position, 529.
Psoriasis, 541; a neurosis of the skin, 311; gallacetophenone for, 353; treatment of, 36.
Psorospermosis, 622.
Ptyalism and dysentery, 538.
Puerperal fever, 427.
Pulmonary artery, thrombosis of the, in the puerperal state, 591.
Pyæmia following acute suppurative otitis, 166.
Pyle, J. S., a new method of removing the prostate gland, 147; supra-pubic hysterectomy as performed with a set of new instruments devised for the purpose, 583.
Pylorectomy and vivisection, 655.
Pylorus, stenosis of the, 78.
Pyoktanin in dermatology, 94; in diphtheria, 706; in the treatment of granular ophthalmia, 480.
Pyonephrosis, anomaly of the liver mistaken for, 224.
Pyrosis from oatmeal, 264.
Pyrozone in dermatology, 93.

Q

Quacks, enforcing the fulfilment of advertised promises of, 384; itinerant, legislating against, 346; running down the, 572.
Quarantine, administration of the present laws of, 373; an English view of, 372; an ill-timed criticism of the New York, 281; and cholera, 344; at New Orleans, 369; Canadian, 748; establishment of a national, 708, 738; establishment of a twenty-day, 314; increased facilities for, 343; period of detention at, 373; report of the New York Chamber of Commerce on, 712; success of, in New York, 484; suggestions relating to improvement of, 581.
Quimby, Charles E., the treatment of ulcers by strapping, 755.
Quinine, hypodermic use of, 353; in cholera, 399, 676.

R

Rabies, treatment of, by immunified blood-serum, 422.
Rachitis, 479.
Railroad surgery, 710.
Rectal feeding, formula for, 737.
Rectum, cancer of the, 256; cancer of the, medical treatment of, 595.
Red Cross insignia, 104.
Reed, Robert J., a modification of Teal's rectangular flap operation in amputation of the extremities, 248.
Reese, Dr. John J, death of, 347.
Reflex spasms, value of sulphonal in the relief of, 24.
Reflexes, tendon, diagnostic and prognostic value of, 1.
Reproductive organs, relation of, to cerebro-spinal disturbances in women, 715.
Resorcin, dose of, 761; in chronic gastritis, 761; in dermatology, 93; in ulcer of the stomach, 595.
Respiration, value of forced, 22–24.
Respiratory centre, situation of the, 680.
Retina, foreign body in the, 197; hyaline bodies in the nerve-head, 197; scleral puncture in detachment of the, 200.
Rheumatic diathesis, treatment of chronic nervous disease in patients with the, 309.
Rheumatic pains, rhus for, 354.
Rheumatism, and pleurisy, analogy between, 22; in Japan, 355; red bilberry in articular, 510; salophen in, 164.
Rheumatoid arthritis, neuroses in chronic, 322.
Rhus poisoning, treatment of, 163.
Rhus radicans in enuresis of childhood, 707.
Riberi prize, 373.
Richardson, D. A., vitiligo in a negro, 575.
Ricord, a statue to, 232.
Ridlon, John, rotary lateral deformity of the spine in Pott's disease, 333.
Right of way, physicians have the, 572.
Riley, Mr. Henry A., death of, 163.
Ring, Henry W., chancre of the right upper lid, 535.
Riviera, letters from the, 108, 200, 226, 323, 463.
Roads, the doctor's interest in good, 709; working for good, 599.
Robinson, Beverley, disorders of the ears in typhoid fever, 273.
Robinson, Fred. Byron, dangers of intestinal invagination subsequent to operation, 188; intestinal sutures, 550.
Rocky Mountain region for consumptives, 152.
Rogers, W. K., Jr., an appliance for the administration of ether, 381.
Roman fever, 233.
Rome, the new, 233.
Roosa, D. B. St. John, the prevalence of corneal astigmatism in eyes with normal acuity of vision and without asthenopia, 615
Roosevelt Hospital, a medical pavilion at, 656.
Roosevelt, J. West, use of heart-stimulants, and particularly of strychnine, in the treatment of acute lobar pneumonia, 728, 743.
Rose, A., the permanent warm bath employed in articular inflammation, 507.
Ross, Dr. George, obituary of, 600.
Roth, Dr. Ignatz, death of, 252.
Rouen, insanitary condition of, 635.
Round ligaments, modification of Alexander's method of shortening the, 588.
Roy, Charles D., cough, some of its causes and its treatment, 11.
Roy, Philip S., a case of chorea in a negro, 215.
Royal College of Surgeons, annual meeting of the, 606.
Ruppaner, Dr. Anthony, death of, 194.
Russia, American physicians in, 683.

S

Sabathu leper asylum, 600.
St. Louis, epidemic of typhoid fever in, 681.
Salicylic acid for tape-worm, 348.
Saline infusion, arterial, 559.
Salol in chronic cystitis, 353.
Salophen, 440; in acute rheumatism, 164.
San Antonio and Southwest Texas as a winter resort, 588.
Sanitary Congress at Portsmouth, 462.
Sanitaria, English, disadvantages of, 397.
Sanitation, bureau of, at the World's Fair, 745.
Saratoga, therapeutic efficacy of the waters of, 49; what to do at, 17.
Sarcoma of the clavicle, excision of the inner two-thirds of the bone for, 586.
Savannah, selecting a quarantine officer for, 459.
Scapula, total extirpation of the, with retention of the arm, 79.
Scarlet fever in London, 492, 520; the Fulham case of, 175; treated with antifebrine, 481.
Schmitt, J., movable kidney and diseases of the generative organs in the female, 469.
School children, can they be intellectually overtaxed? 622.
Sciatica and varicose veins, 351; due to osteo-sarcoma of the ilium, 80.
Scorbutus in infancy, 419, 575.
Scrotum, amputation of the, 25.
Scudder, Dr. Charles D., obituary of, 104; resolutions on the death of, 162.
Sea-sickness, treatment of, 354. 565. 598.
Semmelweiss, monument to, 599.
Sensory disorders, association of, with visceral disease, 322.
Sex, rule for controlling the, 351.
Sexual brain differences, 132; and high-school education, 45.
Sexual hypochondriasis and perversion of the genesic instinct, 429.
Sexual perversions, murder and, 193.
Shadow-test, some incidental phenomena of the, 198.
Shepherd, Francis J., death from pulmonary embolism following operation for appendicitis, 14.
Ship's surgeon, log of a, 356; incompetency of, 101.
Shock, 690.
Shot compressor, an improved, 692.
Shoulder-joint, dislocations of the, 563; Zola on amputation of the, 524.
Shraly, George F., some observations on cancer of the breast, 573.
Siegfried, C. A., some observations on the etiology and treatment of diphtheria, 611.
Singing-masters and modern physiology, 460.
Sinus, lateral, wound of the, 167.
Skatological medicine, 84.
Skene, Alex. J. C., vaginal hysterectomy for the relief of malignant disease, 30, 50.
Skin, bleeding from the, 635; tonic for the, 354.
Skin diseases, antimony in, 478; etiological treatment of, 568; relation of, to the general health, 172; treatment of certain familiar, 35.
Skin-grafting, a new method of, 164; cases illustrating, 222.
Small-pox and anti-vaccination, 383; influence of, on menstruation, pregnancy, and lactation, 480; transformation of, into cow pox, 164
Smith, J. W., Lamblin abdominal needle, 263.
Smith, Howard, notes on electro-therapeutics in Paris, 561.
Smith, Joseph T., the specific action of drugs, 155.
Smith, O. H., treatment of cholera by rectal injections, 380.
Smith, Stephen, suggestions relating to improvement of quarantine, 581.
Smith, William A., death of, 219.
Smoke as a curative agent in pulmonary tuberculosis, 444.
Snare, a modified Hartmann, 382.
Society, the medical, 130.
Solly, S. E., the influence of diathesis upon the progress of phthisis, 651.
Sore throat, membranous, 106.
South, cheap medical education in the, 102.
Southern Surgical and Gynecological Association, 685.
Spanish-American Congress of the Medical Sciences, 283.
Spatulas, wooden, 511.
Specialism in medicine, 688.
Specialist question in Germany, 225.
Spence, Arnot, the results of expectant treatment in 323 cases of typhoid fever, 609.
Spina bifida, excision of, 214; treatment of, by excision, 64. 80.
Spinal abscess, treatment of, 257, 354.
Spinal cord, gliom of the, 631; lesions of, some practical points in the diagnosis of, 553.
Spinal sclerosis, treatment of posterior, by extension, 192.
Spine, fracture of, by muscular action, 565; rotary lateral deformity of, in Pott's disease, 333.
Spitting habit, the, 130, 140.
Spleen, cyst at the hylum of the, 378.
Splenomegaly, primitive, 479.
Sponge, murdered with a, 737.
Spoon, perforation of the intestine by a, 471.
Sprays in the treatment of catarrhal affections of the upper air-passages, 107.
Staining, an improved method of, 288.
Stapes, improvement of hearing following removal of the, 167.
Stark, Henry S., the pathogenesis of gonorrhœal joint affections, 208.
Statistics, complexities of, 195.
Statues of eminent doctors, 543.
Stearates in dermatology, 95.
Steele, Whitmore, a case of dermatitis exfoliativa, 591.
v. Steinau-Steinrück, Dr. Otto, death of, 373.
Stercorœmia, acute febrile, 484.
Sterility following typhoid fever, 5.
Sternberg, George M., the biological characters of the cholera spirillum, and disinfection in cholera, 387.
Sternum, resection of the, 216.
Stethoscope, an improved, 82; essentials of a good, 494, 575; for auscultatory percussion, 176.
Still-birth, an alleged sign of, 392.
Stomach, and liver, difficulties of diagnosis in lesions of the, 222; cancer of the, operations for, 15; cancer of, without gastric symptoms, 224; chronic inflammation of, resorcin for, 761; dangers of washing out the, 635; disorders of the, flatulence in, 249; gun-shot wound of the, 172; malformation of the, 433; perforating round ulcer of the, 547; ulcer of, resorcin for, 595.
Stomatitis due to irritation of epithelial pearls in the mouth of new-born children, 411.
Stools, white, 755.
Stricture, urethral, tuberculosis simulating, 248.
Strychnine, in acute lobar pneumonia, 728, 743; in inebriety, 636; rigidity after death from, 718.
Students, eyes of California, 540

Subclavian and common carotid arteries, ligature of the, 256.
Success, professional, and culture, 544.
Suicide, attempted, of children, 346; heart of a, 713.
Suicides, 425; in Berlin, 219; yearly number of, 412.
Sulphonal in cramps of fractured limbs and other reflex spasms, 24; poisoning by, 523.
Sulphur in chlorosis, 264.
Sulphur-baths, the use of, 756.
Sulphuretted hydrogen, soporific effect of, 249.
Sundberg, Dr. John C., appointment of, as consul at Bagdad, 544.
Sun-spots and insanity, 281.
Supra-renal capsule, solitary tubercle of the, 461.
Surgery, American, achievements of, 637; compatibility of conservative and aggressive, 687; synthesis in, 168.
Surgical operation, deaths from, in New York City, 711.
Sutures, intestinal, 550.
Sweat, abnormal secretion of, 191; eliminative value of the, in infectious diseases, 552.
"Sweating," law against, in New York, 496.
Swinburne, R. E., the relation of aural and nasal affections, based on one thousand cases of otitis media, 148.
Symphyseotomy, 506; first successful case of, in this country, 543; remarkable results of antiseptic, 406.
Symptoms in perspective, 550.
Syphilis, and acute yellow atrophy of the liver, 506; and uterme fibroids, 542; as a defence of breach of promise, 514; duration of treatment of, 370; lamb's blood-serum in, 493; occulta, 352; prevention of, 322.
Syphilitic nervous affections, treatment of, 137.

T

Tachycardia, 456, 539; paroxysmal, treatment of, 493.
Talipes, equino-varus, 25; equino-varus, open incision for, in an adult, 80; equino-varus, radical treatment of, 717; etiology and treatment of, 437; treatment of, 528; see also *Club-foot*.
Tanfani, Dr. Enrico, death of, 219.
Tapeworm, increasing prevalence of, 594; salicylic acid for, 348.
Tariff, relation of the medical profession to the, 654.
Taylor, Dr. Clarence O., death of, 252.
Teal's rectangular flap operation, modification of, in amputation of the extremities, 248.
Teeth, an infant born with, 589.
Tendoplastic operation, 495.
Tenon's capsule, inflammation of, in mercurial poisoning, 200.
Terry, Dr. C. C., death of, 103.
Test-card, a combination, 579.
Testis, ectopia of the, 157.
Tetanus, 426; immunity from, 249; observations on, 352; treated by cold baths, 680; treated by the Tizzoni-Cattani antitoxin, 132.
Tetronal and trional, 356.
Texas, trouble in, 401.
Thallin in typhoid fever, 594.
Thiersch's skin grafting for webbed fingers, 631.
Thilanine, 82; in dermatology, 95.
Thiophendiodid, 74.
Thiosinamine in lupus, 744.
Thorax, surgery of the, 254.
Throat, operations upon the, influence of certain diathetic conditions upon the prognosis in, 105.
Thrombosis of the pulmonary artery in the puerperal state, 591.
Thyroid extract, subcutaneous injection of, for myxœdema, 580.
Thyroid gland, the fresh, as food, 571.
Tibia, tuberculosis of the, amputation of the thigh for, 214.
Tingley, W. K., peculiar vaso-motor disturbance after the administration of phenacetine, 341.
Tinnitus aurium, cocaine in, 479.
Tobacco and cholera, 711; and the tobacco habit, 482; consumption of, in Great Britain and France, 356.
Tobacco smoke, antiseptic property of, 10, 262.
Tongue, fibrous epithelioma at the root of the, 106.
Tonic after a debauch, 354
Tonsillotomy, new method of checking bleeding after, 699.
Tooth culture, 551.
Toothache, reflex, 496.
Toronto University, recent election to the Senate of, 747.
Torticollis, spasmodic, 629.
Tracheotomy, creosote in, 351; versus intubation, 545.
Transfusion, case of instruments for, 576; monument to the reviver of, 599.
Transilluminator, a practical, 521.
Trembling, hysterical, and anorexia nervosa, 136.
Trephine, when to, 565.
Trephining, exploratory, 137; for cranial injury, 742.
Trichiniasis, microscopic specimens from, 743.
Tricophytosis capitis, treatment of, 352.
Trigeminus, resection of the, 78.
Trional and tetronal, 356.
Trocar, a dilating, 522.
Trolley wire, a doctor injured by, 572.
Tropa cocaine and tropine, 628.
Tryon, Dr. Rufus J., honors to, 711.
Tubal moles and tubal abortion, 661.
Tubercle bacilli, growth of voluminous cultures of, 378.
Tubercular peritonitis, spontaneous cure of, 690; treatment of, 689.
Tuberculosis, bedbugs as carriers of, 347; congress for the study of, 281; creasote in the treatment of, 151; dissemination of, by earthworms, 279; general, 51; genital, in women, 715; hypodermic use of gold and manganese in, 303; in Egypt, 320; in later adult life, 681; in the White House, 512; miliary, and gummata in the same lung, 659; miliary, of the lungs and kidneys, 660; of the bones and joints, 78; of the eye, 539; of the genito-urinary tract, 432; of the tibia, amputation of the thigh for, 214; Pennsylvania Society for the Prevention of, 543; pharyngeal, lactic acid in, 690; prevention of, 322; primary, of the urethra, simulating stricture, 248; prize for essay on, 152; retro-peritoneal, simulating hernia, 407; Rocky Mountain region for sufferers from, 152; smoke as a curative agent in, 444; see also *Phthisis*.
Turn-table for collecting sediments from fluids, 53.
Turpentine stupe, death from the ignition of a, 328.
Tyndall on phthisis, 411.
Type, origin of, in disease, 441.
Typhoid bacillus, vitality of the, 539.
Typhoid fever, an epidemic of, 348; antisepsis in, 292; antiseptic oxygenation in, 514; cool baths in, 352; disorders of the ears in, 273; respiratory prodromes of, 480; results of expectant treatment in, 609; some points in the etiology of, 54; sterility following, 5; the nervous sequelæ of, 398; thallin in, 594.
Twins, insuring against, 552.

U

Ulcer of the stomach, resorcin in, 595.
Ulcers, dysenteric, 259; of the leg, 258; of the leg, treatment of, by strapping, 754.
Umbilical hernia in woman, 410.
Umbilical cord, œdema and inflammation of the, 377.
Ureter, occlusion of the right, with cystic degeneration of the left kidney, 51.
Ureters, a case of three, 755; implantation of the, into the rectum, 23; surgery of the, 688.
Urethra, nematode parasitic worm in the, 432; primary tuberculosis of the, simulating stricture, 248; treatment of the, 175.
Uric acid gravel, causes and treatment of, 173; chemistry of, 81; treatment of, 352.
Urine, blood in the, how to discover its source and what to do for it, 525; in phthisis, 679; of high specific gravity, 538.
Urticaria, treatment of, 132, 353.
Uterus, association of cancer and fibroids of the, 678; atresia of the cervical canal resulting from syphilitic ulcers, 190; cimicifuga in disorders of the, 291; diarrhœa from retroflexion of the, 735; disease of, simulated by abnormal conditions of the abdominal organs and tissues, 601; Dudley's operation on the cervix, 589; extirpation of a cancerous, in the sixth month of pregnancy, 680; extirpation of the, 79; fibroid tumor of, complicating pregnancy, 260; fibroids of the, and syphilis, 542; hysterectomy for fibroids of the, 409; injections of glycerine to stimulate contractions of the, 620; interstitial and submucous fibro-myoma of the, 433; malignant adenoma of the, 432; new instrument for dilatation of the cervix, 713; operations for cancer of the, 408; polypoid hypertrophy of the mucous membrane of the, 603; polypoid spindle-celled sarcoma of the, 288; radical cure of retroflexion of the, 286; rupture of, in the fourth month of pregnancy, 686; sarcoma of the, 576; treatment of fibroids of the, 286; vaginal hysterectomy in malignant diseases of the, 29, 30, 49; various forms of cervical inflammation, 689.

V

Vaccination and small-pox, 354.
Vaccine virus, propagation and preservation of, 391; transportation of, by carrier-pigeons, 608.
Vagina, neoplasms in the, 479.
Vaginal irrigator, a new, 578.
Vaginismus, a case of, 42; treatment of, 494.
Valentine, R. K., an improved stethoscope, 82.
Vanderpoel, Edward, cholera in New York in 1832, 412.
Van Voast, Dr. George W., death of, 104.
Varicocele, cremasteric reflexes in, 22.
Varicose veins and sciatica, 351.
Variola, varioloid, and varicella, 479.
Veins, air in the, 25.
Venereal diseases, periodicity of, 565.
Venesection, 33, 162, 320.
Venezuela, surgical work of foreign naval officers in, 653, 711.
Ventilation by means of heated walls, 356.
Vertebral artery, ligation of the, 137.
Vertex, occipito-posterior positions of the, the best management of, 410.
Vertigo, 426; aural, and drowning, 710.
Vienna, University of, 515.
Villemin, Dr., death of, 635.
Virchow, speech of, on assuming the rectorate of the University of Berlin, 607.
Viscera, transposition of the, 397.
Visceral disease, association of sensory disorders with, 322.
Visual area of the cortex of man, extent of, 136.
Visual fields, intra cranial lesions with defects in the, 199.
Vivisection, controversy over, 457, 482, 485, 515, 519, 683, 745.
Vitreous chamber, removal of a fragment of steel from the, by the electro-magnet, 197.
Vitiligo in a negro, 575.
Vocal cords, absolute rest is the best treatment for lesions of the, 44; bilateral paralysis of the abductors of the, 706.

Voice, influence of diet and digestion on the, 713; the falsetto, 536.
Volvulus, traumatic, 605.
Vomiting, feigned, of blood, 744; in floating kidney, 624; of pregnancy, cocaine for, 496; of pregnancy, menthol for, 494.
Vondergoltz, Eric, the internal use and dosage of lysol, 367.
Voris, S. M., effects and causes of laceration of the perineum, 186.
Vulva, pruritus of the, cured by the constant current, 311.
Vulvo-vaginitis in children, 707.

W

Waechter, C., an improved catheter, and some remarks about treating the urethra, 175.
Wagner, Clinton, a case of bilateral paralysis of the abductors of the vocal cords, 706.
Wall, John P., rigidity after death from strychnine, 718.
War, mortality of, 28.
Warren, Lillie Eginton, teaching deaf children to hear, 473.
Warts, porpoise blood for, 18.
Washburn, W., digitalis in kidney disease, 633.
Water, filtered or boiled, 595; germ-free, 635; purification of, 356; simple tests for impurities in, 496; small daily allowance of, 574.
Watkins, Robert L., an electric machine for the production of all kinds of electricity for medical purposes from a single storage battery, 262.
v. Wedekind, L. L., nine cases of gonorrhœa treated with undiluted peroxide of hydrogen, 702; myelitis following catarrhus epidemicus, 418.
Weigert's recent staining for the nervous system, 260.
Weir, Robert F., an unique derangement of the knee-joint demanding surgical interference, 57, 80; how amputation for carcinoma of the breast should be performed, 752, 761.
Welch, George T., malignant cellulitis, or phlegmonous erysipelas, 537.
Wendt, Edmund Charles, the new Rome and the question of Roman fever, 233; the treatment of cholera, 337, 365.
White, John Blake, observations on the hypodermic use of gold and manganese in tuberculosis, 303.
Whitehead, Ralph M., treatment of yellow fever in Brazil, 277.
Whooping-cough, etiology of, 746.
Wiggin, Frederick Holme, diagnosis and treatment of intestinal obstructions, 85.
Winkel's clinic, scientific obstetrics at, 655.
Witchcraft, a bill to prevent, 513.
Woman and science, 46.
Woman medical students, in Edinburgh, 346.
Woman physicians, in Bosnia, 544; in England, 542; in insane asylums, 217, 350; in Switzerland, 544; scarcity of, 748.
Woman's brain, 231.
Woman's dental college in Sweden, 468.
Women, admission of, to the British Medical Association, 312; congenital inguinal hernia in, 755; employment of married, in factories, 679; higher education of, in Germany, 161; inebriety among, 544; lessened vitality of, at the time of puberty and adolescence, 264; medical education of, in Russia, 606; types and treatment of nervous, 523; unmarried, local examination of, 47.
Worcester, W. L., woman's brain, 231.
Wound treatment, aseptic, 78.
Wounds, flaming surgical, 594; immediate treatment of gun-shot, 78.
Wrist, extensive laceration of the, 742.

Y

Yawning, therapeutic application of, 131.
Yellow fever, and the negro, 261; at Santos, 634; etiology and prevention of, 160; in Brazil, treatment of, 277.
Young, A. A., stray thoughts about dyspepsia, 472.
Young, Lawrence B., a plea for less surgical interference in the management of appendicitis, 213.

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